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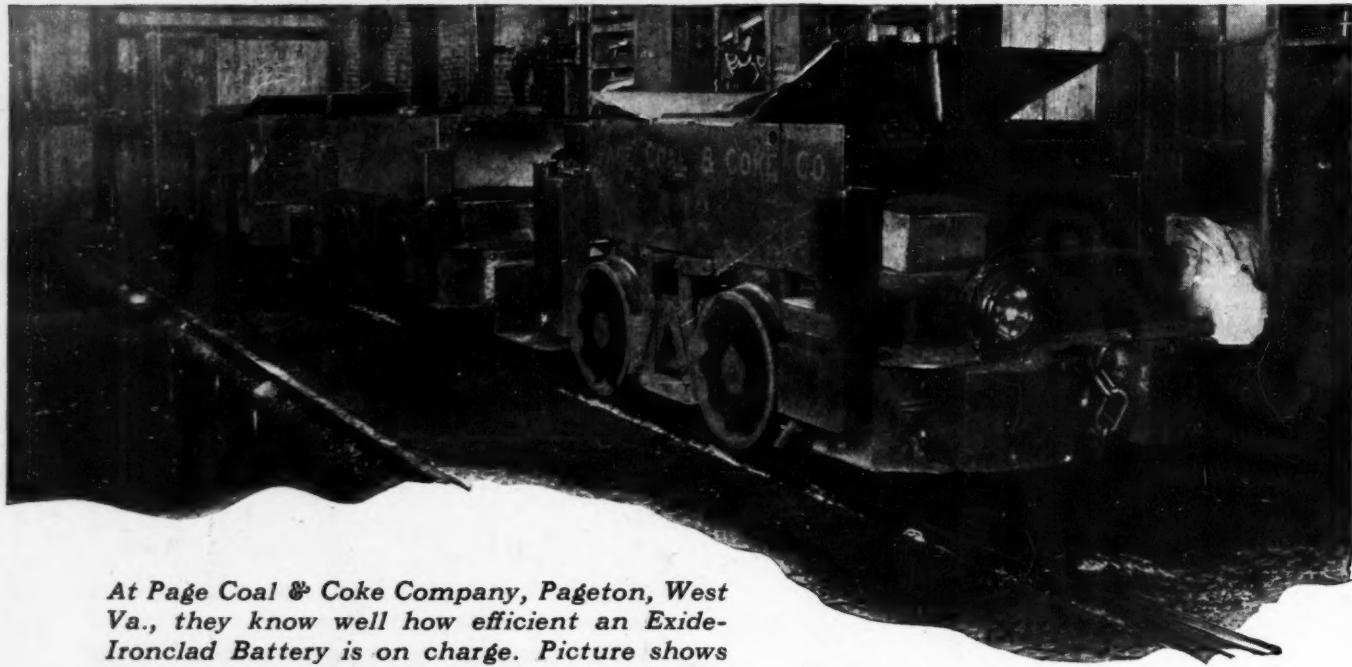
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COAL AGE

With which is consolidated "The Colliery Engineer" and "Mines and Minerals"

R. DAWSON HALL, Engineering Editor

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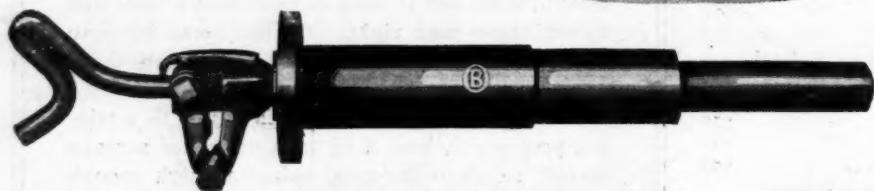
How the Engineer Aids the Banker

WHAT DOES AN ENGINEER know about proper financing of a coal company? Too many bankers and coal operators think he knows little enough. So John A. Garcia, seasoned consulting engineer of Chicago, after long experience in coal, takes pen in hand in next week's *Coal Age* to set these men right. He has some ideas to advocate and he doesn't hesitate to advocate them.

For instance, he contends it is unfair to a mining property to load it up with unworked acreage merely to make the total valuation high enough to give triple or quadruple protection to the bond issue. The mine with such a valuation is saddled with a terrible burden of fixed charges. Also he argues that coal bonds should not be rated up by the financiers who handle them. If they are not sound enough to be rated on a level with other industrials, then they should not be offered for sale.

And nobody should confuse an engineer's appraisal figure with the proper selling price of a mine. An appraisal fixes only the replacement value. The actual worth should be determined only by the earning capacity of the mine. Mr. Garcia has a great deal of expert comment to make about the work the engineer should do in refinancing a mine. It is worth looking for.

STRIPPING OF COAL is on the increase. There is no doubt about it. Therefore, there will be much interest next week in a Midwestern stripping article. The other usual technical and markets-of-the-world features will be found in their familiar places.



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COAL AGE

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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

Volume 28

NEW YORK, AUGUST 20, 1925

Number 8

Industry Shifts Again

BY KEEPING UP the railroad rates on anthracite Band by the prescription of joint rates on prepared sizes of low-volatile bituminous coal the Interstate Commerce Commission has greatly relieved the minds of those citizens who were perplexed as to what they would do in case of an anthracite strike. The hard-coal operators have reason to be alarmed. Fuels once established have a way of "staying put." It is the first step that counts in many cases.

Having learned how to handle a new fuel, having accustomed oneself to its disadvantages—all fuels have them—the consumer does not usually go back. It is not cheering to anthracite operators to read in the commissioners' report what they must well know that approximately eight hundred government buildings in or near Washington that were heated by the combustion of anthracite are now kept warm by the use of low-volatile bituminous coal. It appears as if the recent decision of the Interstate Commerce Commission might put a crimp in the anthracite business from which it will never recover.

As for the union it must look with distress at the possibility of more business going to the non-union regions and leaving the highly unionized anthracite field. It must dread the loss of the strike, for the public will now not be alarmed, and the panic on which the union counted will not occur. The operator may be compelled to fight the battle through, for the public will not care whether the anthracite mines work or remain idle. They will make shift either way.

So now the union will grow weak just where it is strongest, namely, in the anthracite region. It is a hard life that of union leader and union man these days, but one must say that both make a bold front in a losing cause.

Inflation of the industry will be the outcome of the decision, for some of the regions favored are not equal to meeting the needs of the new markets and most of them are insufficiently equipped to supply prepared sizes. New tipples and a revamping of old ones will be the natural result. All the many shifts in the coal industry cause inflation. Every newly developed field, every strike, every unfair wage contract, every revised freight rate does its part, and it seems likely that this new freight decision will with the Jacksonville agreement do much to build up West Virginia.

Coaxing the Ovens Back to the Mines

WHEN THE OVENS were wasteful, black and smoky, they were always located at the mines. Now that they are efficient and make less smoke they have moved over to industrial centers and seem likely to stay there because it is expensive to pipe gas long distances and any process of coking or low-temperature distillation makes a large quantity of gas available.

But what is important is that we, who have seen

the coking industry move rapidly from mining centers, realize that when conditions favor they may come back and perhaps be operated by the mining companies. The ovens at Béthune, France, point to that conclusion. The Companie des Mines de Béthune is making alcohol and ammonia out of the ethylene and hydrogen respectively found in coke-oven gas.

In making the first the ethylene is combined with sulphuric acid to form sulphovinic acid which is then treated with steam. As a result, alcohol and sulphuric acid are formed; by the use of which latter the process can be repeated indefinitely. That ethylene is found only in small quantity in the gas is a disadvantage but it can be concentrated to from 20 to 30 per cent so that it will act readily on the sulphuric acid which is further activated by the admixture of sulphovinic-acid.

It is interesting to note that this company also manufactures synthetic ammonia by means of the hydrogen in its coke-oven gases using the Claude method. It is in the cooling process by which the hydrogen is concentrated that the ethylene is removed, benzol, ethylene, methane, carbon monoxide and many other hydrocarbons being extracted at the several stages.

From the coal mines will come in the future many of the most important of our industrial products, and at the coal mines will the process be elaborated. Apparently Europe, in this chemical development, as in others, is taking the lead.

Who Has the Broken Leg?

READING the newspapers we learn that the coal industry has a harmful strike habit, which being interpreted in the light of facts means that the miners in the industry have made striking a biennial practice. A story goes that there were twins who shared all things in common and when one fell and fractured a limb, the other proudly announced "We-uns have a broken leg."

In like manner the coal industry, which is not one but two persons, operator and miner, is said to have aggregately the strike habit and to be grievously in need of a cure. But if in the study of disease we do not go so far as to study which of the twins is in need of treatment the curative action is not likely to make any progress. The public should ferret into this deep subject a little further and arrive at the conclusion, as to which person it is that has the broken leg. The formula in surgery runs: Find whose leg and which is broken and mend that. Quite simple and obvious, it is true, but important.

In the instance now before the country the anthracite operator wants arbitration, no suspension and a long contract with revisions made by some competent authority whenever occasion demands it, and it is the miner who wants a strike or, as he prefers to term it, a suspension. But the public groups them both together and treats them both alike with condemnation. They

both have, to quote the public, "the strike habit," as both the twins in common possession had a broken leg.

In the early years of the past century, France had the war habit. Presumably our ancestors put it generally as we do and said that, to *Europe*, war was a second nature for we like ever to generalize, recognizing that it saves thought. The French won wars repeatedly; their legions invaded nearly every European land and with success until defeats in Russia and at Waterloo occurred, and the war habit for a while, at least, ended. A Waterloo would end the the strike habit for the miners. They have won so long that they expect their leaders to win more and more ground for them. The public has always given way to them, and they expect to consolidate their gains and press forward year by year. In time they will prove that a high order of skill is needed in the industry by the high rate of pay always conceded to them. They will prove also its risk by the fact that the work is well paid. But, as has been said, a setback or two will kill the strike habit, and the industry will be relieved of its broken leg.

As it has been the public which has granted the repeated increases and has given way every time there was a demand, therefore, the public must be blamed for the leg fracture and from the public should come the cure.

The wrong-headed are insisting that the operators and miners are in collusion to raise wages and to put up prices. After the Pinchot settlement increasing wages 10 per cent, company coal of domestic sizes rose from \$8.18 to \$9. There was no profit in such a small increase. No one can say the Pinchot award was used as an excuse for profiteering. Just the reverse, it was a heavy burden on coal-company finances.

But if the public desires still to believe in this collusion, and no one can argue satisfactorily with the skeptical, let it call on the miners for arbitration and no suspension. Then the operators, who they say have the strike habit and want a strike, will be fooled and everyone will be happy. Let the public take the anthracite operators at their word and give them arbitration. If they really want a strike and have shouted "Peace" just to mislead us, they will be truly unhappy when the public takes them at their word. And when the operators are unhappy every one rejoices. This is the way to tantalize them; give them what they ask.

Is the Miner a Skilled Workman?

"HIGH WAGES for skilled men" is one of the slangs of the mine worker. It is true that there are men in the mines who justifiably may be termed skilled, but they have little use for their talent. The ordinary mechanic—carpenter, mason or machinist—can and does read plans and complicated drawings with ease and accuracy but the miner is under no such necessity. He may see a map hanging in the foreman's office as he goes to his work for the first time. He probably does not examine it, and in most cases would not understand it if he did.

If in any special plan provided there is any degree of complication such as the laying out of a curve or the hanging of a trolley wire many a foreman would look at the "picture" more or less askance and would wonder what it all meant. To the miner it would be even more of an enigma.

The man in the heading or room merely drives in

the direction of the sights and sometimes has the incidence of these marked on the face for him by a man specially appointed. He makes the room so many "shovels" wide and he lays the track—if he does lay it—with a simple gage. He does not even attempt to make a smooth rib as the early, careful, but often wholly illiterate, miners from Great Britain used to do with such marvelous precision in the early days of our coal industry. Of art and science the ordinary miner of today has none.

Many a carpenter, mason or mechanic can handle his T-square, triangle and ruling pen, can design a building and then erect it. His ideas of architectural beauty may be feeble, but his building usually suits the needs and even the ideals of his clients. Too much has been written of the skill of the miner. All that can be said of many of them is that after much instruction they cannot even set a prop when it is needed, bring down the coal without creating an excess of slack, or load a hole in a safe and lawful manner. Many are not even desirous of being skillful.

The Power of Sentiment

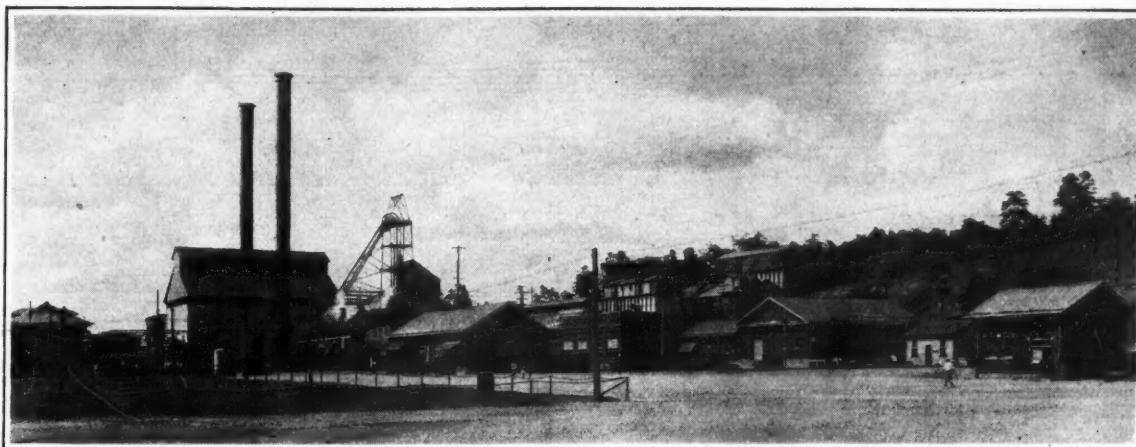
IT IS ALMOST amazing to what an extent the everyday life of most human beings is controlled, dominated and governed by sentiment and habit. Just as the honey-laden bee yearns for its hive, just as the carrier pigeon turns unerringly toward its beloved dovecote, just as the heart of the Scot longs for the heather covered hills of native Scotia, so the soul of the ordinary individual, consciously or unconsciously, delights in the environment of its accustomed habitat and the memories of the days that are gone. Every coal company opening a new mine in a new field suffers from this cause and for years the labor turnover is unusually high.

Not long ago a certain coal concern opened an isolated mine in the Middle West, drawing at least the nucleus of its labor force from some of its older operations. Everything looked propitious. Natural conditions were favorable; the housing and educational facilities provided, far exceeded those available at the older plant. After a year or two of operation, however, it was found that one by one the men had drifted back to the place from whence they came, in many, if not most, instances there accepting positions and wages materially inferior to those available at the newer development.

Reason for this exodus was carefully sought, but for a long time without avail. At length an old miner solved the mystery when he remarked—"You ain't got no cemetery here."

In the sense in which this man used it, the word "cemetery" means something more than merely a suitable place for the interment of the dead—he meant also the traditions and memories that hover around the locality where acquaintances and loved ones have been laid to rest and the prospect, dear to every human, that when his own time shall come, he also may be laid away "with the bones of his fathers."

From the business standpoint, this difficulty of the coal producer is hard to surmount. Any suitable piece of ground may be set apart, designated and dedicated as a burial place, but it takes more than this to make a cemetery. In the sense in which the old miner used the word, a real cemetery can only be attained when time and the memory of those there interred shall have cast a halo of sentiment about the entire locality.



Edgewater Mine Produces Large Output of Washed Coal Under Adverse Conditions

Local Faults Divide Workings Into Sections at Different Levels—Electrification Is Complete Except for Hoisting—Steam-Driven Stand-bys Are Kept Ready for Emergencies

By Robert Hamilton

Consulting Engineer, Tennessee Coal, Iron & R.R. Co.,
Birmingham, Ala.

NEAR THE LOWER end of the Warrior coal basin in Alabama lies the Edgewater mine of the Tennessee Coal, Iron & R.R. Co. This operation produces more than a million tons of washed coal annually from a single seam so faulted that coal is mined on three levels and hauled to one main shaft for skip hoisting. These natural conditions divide the mine into sections and contribute to the difficulty of getting out coal, but sound methods, good equipment and close supervision have combined to raise extraction to 95 per cent. The performance of the mine and the substantiality of construction on the property and about the Edgewater community make the operation one of Alabama's striking coal properties.

Edgewater is approximately 12 miles west of Birmingham and three from Ensley where the chief furnaces and mills of the company are located. An interworks railroad connects this and the various other mines of the company with its industrial works including the byproduct ovens where most of the mine product is made into coke.

At this mine the coal measure worked is the Pratt seam well known for its excellent coking qualities. An average section of this measure would be about as follows: Top, sandstone or slate, coal 6-in., slate 2-in., coal 44-in., slate 6-in., coal 11-in., bottom, hard clay. The total height of this bed is thus 69 in., of which 61 in. is clean coal with 8 in. of slate and parting.

Six thousand acres lie tributary to this mine in which after 13 years of operation there remains

The headpiece shows a general view of the upperworks at the Edgewater mine. The valley of the stream that runs past this plant is more or less subject to overflow so that all dwellings must be placed on higher ground. None of them, therefore, appears in this view.

36,000,000 tons yet to be recovered. This mine is divided into three sections, separated by faults, near one of which (the Camp Branch) the hoisting shaft is located. Here the dislocation amounts to 147 ft., a rock tunnel connecting the shaft to the workings on the upper level. On the main east entry another rock tunnel is driven to the lowest level, the dislocation at this point being 55 ft. A small, double-drum, motor-driven hoist hauls the coal through this tunnel to a side track on the main east lower level.

Dislocation in the fault passing near the shaft amounts to nothing at the southern barrier pillar. From this point in a distance of 6,000 ft., it gradually increases to 172 ft. In the next 8,000 ft. the average throw amounts to about 100 ft. At this point this fault subdivides into five separate dislocations and disappears entirely within the next 1,000 ft.

Such faults not only change the vertical location of the coal but in many instances alter the line of dip. Thus the first south entry on the upper level slopes $\frac{1}{2}$ per cent to the southward, whereas the main south entry on the lower level rises 1 per cent to the south.

All workings are on the room-and-pillar plan with entries either single or double as local conditions may dictate. Rooms are driven 35 ft. wide and double tracked. The width of pillars is determined by the depth of the coal; when this is not more than 350 ft. first working must not exceed 50 per cent of the total area. As greater depth is attained the size of the pillars is increased to carry the additional burden and permit removal of the pillars without loss. It is the general practice to draw both room and entry pillars retreating as soon as room work is completed.

Electric undercutters are employed on all room and

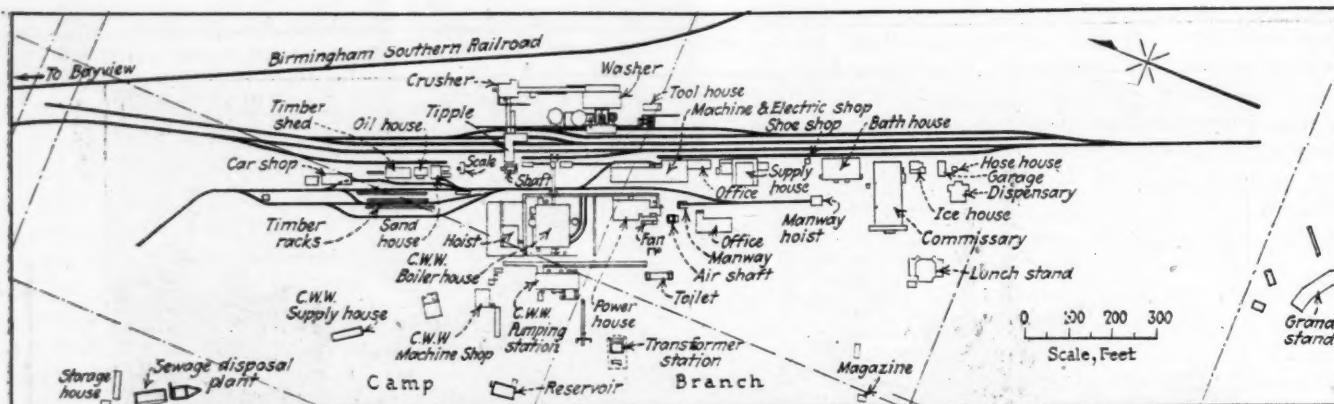


Fig. 1—General Layout of Edgewater Surface Plant

This shows the arrangement of buildings railroad tracks and the like. It will be noted that the shaft is on one side of the tracks and the washery on the other. While the boiler plant and pumping station are not considered as forming a part of the mine plant yet steam is furnished for operation of the main hoist.

entry work and, when roof conditions will permit, on pillar drawing as well. Timbers in rooms are set in rows 4 ft. apart each way and must be kept within 4 ft. of the working face. All mining machines are equipped with spraying heads and before the coal is shot the entire face is wet down with a garden hose by men employed for that purpose.

Inherent moisture in this coal normally amounts to 3.33 per cent. Samples taken daily for a month after the coal was crushed preparatory to washing showed that the spraying and wetting down of the face increased the moisture content of the entire output 1.84 per cent, making a total of 5.17 per cent.

Normally the coal is loaded and delivered on the entry by the miner. In many places, however, local grades against the loads are too steep for manual labor in which case the cars are moved to and from the face by company men who employ a small self-propelled electric crab car as shown in one of the accompanying illustrations. This machine moves along the entry and can either deliver the loads at the room necks or make them up into trips ready for the haulage locomotive.

In his work the mine foreman is assisted by a number of section foremen each of whom must hold a fire boss' certificate. Each such section foreman has about 50 men under his control. Particular care is exercised over miners who may be engaged in drawing room or entry pillars. This close supervision is responsible for a recovery amounting to fully 95 per cent. The mine foreman is provided with an underground office where he can meet the section foremen and fire bosses and from which he issues instructions. A first-aid room

where, through periodic inspection, all necessary medical equipment is kept in first class condition, is also provided.

Mine cars in service at this operation are of the solid body type equipped with 14-in. roller-bearing wheels. They are 8 ft. 9 in. long over all, 4 ft. 3 in. wide and weigh approximately 1,600 lb. The average load carried by these cars is 2,800 lb. and the number in service averages 1,050. The axles extend 2 in. beyond the wheel hubs and the cars are held in the revolving dump by these projecting axle ends instead of by gripping the top of the wheels as is common practice. The rings or hand holds on the ends of the cars are somewhat of an innovation. They were installed originally as a safety precaution in mines where there was but small clearance beyond car and roof. Where the miner delivers the loaded car at the entry, however, they have proven highly advantageous when crossing switches. Consequently they have been adopted generally throughout the mines of the Tennessee company.

On the lower level of this mine, eleven 8-ton electric locomotives are used, operating on 250-volt direct current at a speed of 6 m.p.h. They are equipped with 40-hp. motors. Partings are provided at suitable points from which the coal is hauled in "through" trips of 20 cars each to the side track at the shaft bottom. All loaded trips from both north and south main entries are delivered on the south side of the shaft, a runaround being provided.

On the upper level, loads are delivered to a side track on the main west entry at the second south entry. From here 20-car trips are hauled to the shaft bottom by a double-track endless-rope system. Twelve 8-ton mine locomotives are in use on this level.

At the shaft bottom all cars are uncoupled and weighed separately. Their contents are discharged in a three-compartment, gravity-operated revolving dump. Six cars may be and usually are in this dump at one time—two loads and four empties. One-third of a revolution is sufficient to dump a pair of loads. Coal from the dump enters an equalizing bin of approximately 40 tons capacity from which it moves by gravity to a measuring bin of 6 tons capacity or sufficient to fill one skip. Movement of the coal from bin to skip is controlled by two hydraulically-operated gates. These in turn are controlled by a 4-way valve which insures closure of the upper gate before the lower one can be opened. A small winch is provided for manipulating these gates by hand in case of emergency. This

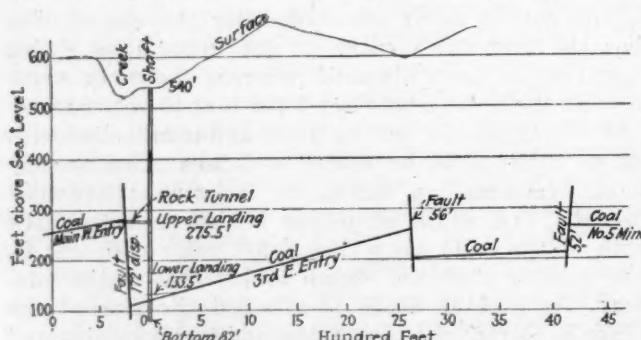


Fig. 2—Cross-Section of Shaft and Coal Bed

This shows how the mine is divided naturally into three sections by faults. Not only are underground operations thus cut up by nature but the pitch of the grades varies considerably because of these displacements of the measures.

is rarely called into use, however. One man loads the skips and does all signaling to the hoist engineer.

Arrangements on the upper level are similar to those on the lower except that an additional kickback and car haul are necessary to control the movement of the empties. On Aug. 10, 1922, 6,200 tons were hoisted in two shifts. Of this total, 3,722 tons were produced on the day turn and 2,478 tons on the night shift. These are averages of 414 and 275 tons per hour, respectively.

All mine tracks are laid to 36-in. gage. All main entries are furnished with 60-lb. rails supported by steel tie plates and laid on 5 x 6-in. creosoted pine ties. No. 4 reinforced manganese steel frogs and weighted switches are employed generally on all turnouts except those in the vicinity of the shaft bottom where a few No. 6 frogs are used. Entry track is graded carefully and ample clearance provided on one side for the passage of employees.

Room entries are laid with 40-lb. steel rail on 5 x 6-in. untreated ties protected by steel tie plates. On room turnouts No. 2 plate frogs are used. Room entry track is only graded where local dips are encountered and natural grades are too heavy for economical operation. Rooms are double tracked with 16-lb. rail.

So far as possible this mine is ventilated on the split system. In extensive workings such as these, where the coal is produced at points a long distance from the shaft bottom, it is customary for the sake of safety to drive rock tunnels to the surface which serve as escapeways. As a rule these are 7 x 12 ft. in cross-section and are driven on a 30-deg. pitch.

Three such escapeways are available from the upper level of this mine. One is located at the third south entry off the main west entry, one is near the fifth north entry while the third is known as No. 8 escapeway and is located at the extreme southern end of the workings. An opening is also provided through the barrier pillar to the Bay View mine. This is located at the face of the second north entry and serves both operations. Under all conditions this opening is sealed.

To accomplish this seal two concrete partitions have been built, each 6 ft. thick. They are located 6 ft. apart. In each an opening 24-in. in diameter is left. A 3-in. shaft with four steel disks keyed to it, that is, one disk on each side of each partition, passes through both concrete walls. Two-foot circular openings are provided in each disk and the disks arranged in pairs, that is the openings in the two disks on opposite sides of each bulkhead are in line with each other but at an angle of 180 deg. with the openings in the other pair. As all disks are keyed rigidly to a common shaft they



Fig. 3—Electrically Driven Crab Car

Where grades in the rooms are too steep for the cars to be moved by hand this crab is employed. The cable may either pull its load direct or it may be led around guide blocks or sheaves.

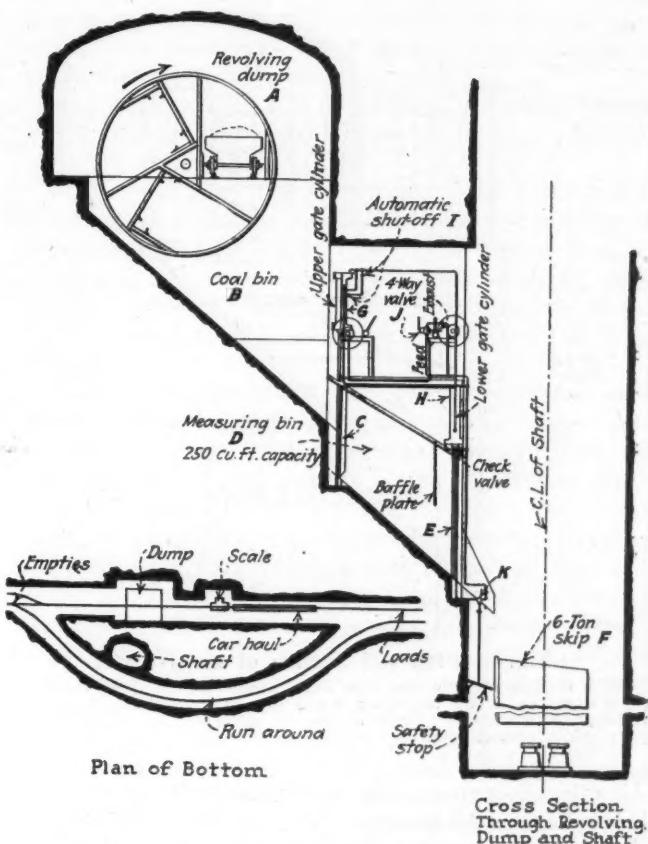


Fig. 4—Section Through Dump, Bin and Shaft

From the dump the coal slides into the measuring bin and thence into the skip. Inasmuch as all lump coal is crushed before going to the washery no particular pains are taken to prevent degradation.

all turn together. This arrangement assures closure of the opening through the seal at all times yet permits the ready passage of men.

The ventilating fan serving the upper level is located on the third south entry escapeway 4,500 ft. southwest of the shaft. It is of the half-casing, double-inlet, reversible type, 8 ft. in diameter and 3 ft. 6 in. wide. It now produces 120,000 cu.ft. of air per minute against a 4-in. water gage. This machine normally is belted to a 125-hp. motor. A second machine of like size but operated on direct current is held in reserve and may be started up at any time. As originally installed, both these machines were operated on alternating current—one motor on 60 and the other on 25 cycles. This arrangement did not prove entirely satisfactory inasmuch as during heavy electrical storms both lines would be disabled with the result that the mine would be closed down for days.

In order to forestall this contingency the size of the 250-volt main feeder line was somewhat increased and a direct current motor installed. A 400-kw., 250-volt, steam driven generator is kept under steam at all times ready for any emergency.

Intakes for the upper level are the escapeway near the fifth north and the manway near the main shaft.

An 18 x 7-ft. Guibal type of fan ventilates the lower level. This machine originally was driven by steam but is now belt-connected to two 150-hp. motors, one a 60-cycle a.c. and the other a 250-volt d.c. machine. It is installed at the air shaft, a short distance from the main hoisting shaft and now produces 110,000 cu.ft. of air per minute against a 3.4-in. water gage.

Fig. 5 shows the type of air crossing or overcast that has been adopted as standard by this company.

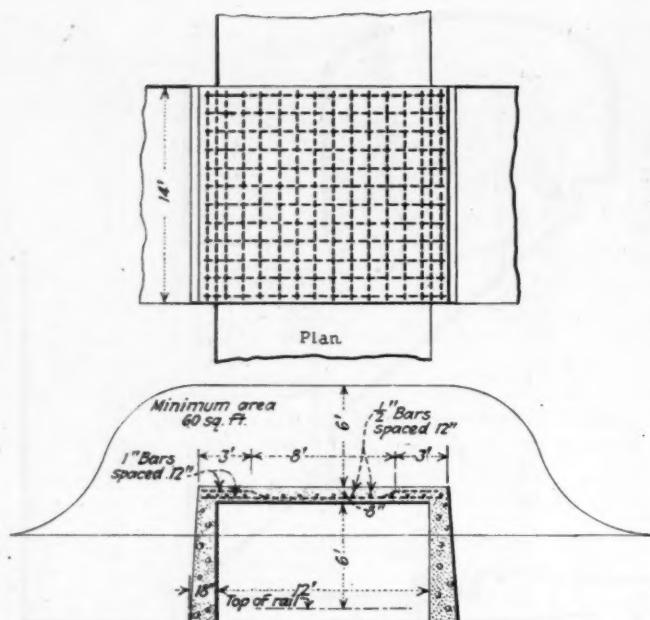


Fig. 5—Plan and Section of an Overcast

This design of overcast has been made standard in this company's mines. The sides or walls are of plain and the top of reinforced concrete. This makes a finished job that is both permanent and efficient.

All mine doors are built to standard size and installed in duplicate. All haulage roads are sprayed throughout their entire length at least every other day. Air samples are taken in each return at least weekly and tested for methane. Intakes for the lower level are the main shaft and the escapeway at the second north entry approximately one mile north of the main shaft.

The main pumping station is located on the lower level near the main shaft. The equipment consists of two centrifugal pumps of 2,500-gal. per minute capacity, direct connected to 400-hp., 2,300-volt, alternating-current motors operating at 1,200 r.p.m.; also two 6 x 18-in. triplex plunger pumps backgeared to 40-hp. direct-current motors. These latter machines supply the coal washery, the spray lines and the bin gate operating mechanism at the shaft bottom. Fifteen small gathering pumps are scattered throughout the mine at points where gravity drainage cannot be obtained.

During 1924, 445,000,000 gal. of water was pumped from this mine. This is equal to approximately 12 per cent of the total precipitation over the working area.

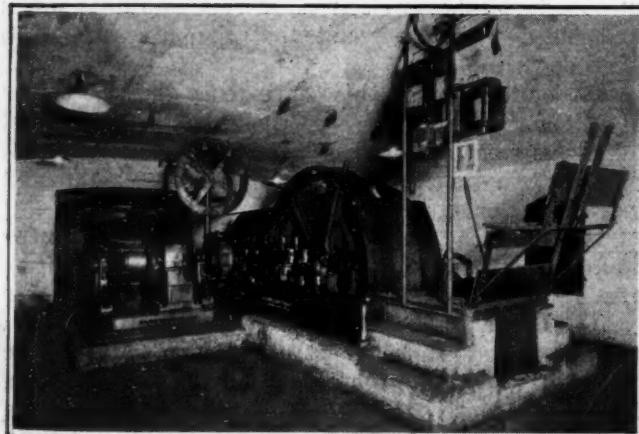


Fig. 6—Endless Rope Hoist Underground

This machine hauls the cars in trips up the pitch of the upper level to the shaft or to a point from which they will gravitate to the shaft.

It amounts to an average of 1.6 tons of water per ton of coal produced.

The main shaft is of oval cross-section with major and minor diameters of 21 and 12 ft. respectively. It is concrete lined throughout and the buntons and guides are steel H-shapes. Its depth from the surface to the upper-level skip landing is 294 ft. while to the lower-level landing it is 427 ft. The dumping point on the headframe is 73 ft. above the surface, making total hoists from upper and lower levels of 367 and 500 ft. respectively.

The self-dumping skip has a capacity of 6 tons and, when empty, weighs approximately an equal amount. The headframe is of steel construction throughout and has a total height of 102 ft. From the supply bin of approximately 40 tons capacity, the coal is fed to the shaking screens by a reciprocating plate feeder.

The screens are arranged for a normal delivery of all coal to the washing plant. When necessary, however, run-of-mine, nut and slack and hand-picked lump can be loaded onto railroad cars. The upper deck of the screen is fitted with 3-in. perforations the undersize feeding direct to the belt conveyor leading to the washery; the oversize passes over a picking table and thence either by chute to railroad cars or by conveyor to the washery. In this latter case the larger coal is

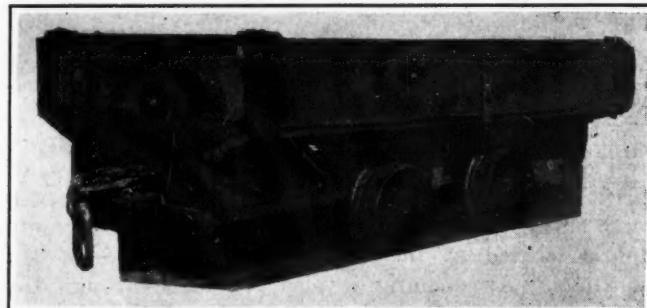


Fig. 7—Mine Car Used at Edgewater

Two details of this car are somewhat unusual. Two rings are attached to the solid end gates near the top. These serve as handholds and make it unnecessary for the miner to place his hands on top of the box when moving the car. The axles also project about 2 in. farther from the wheel hubs than they do in most cars. This projection furnishes a means of holding the car in the rotary dump.

placed on top of the smaller material, only one conveyor extending to the washery.

The air shaft is 380 ft. south of the hoisting shaft and is sunk to the lower level with a short rock tunnel connecting it to the upper level. This shaft is circular and 11 ft. in diameter. It is concreted down to the solid rock, below which point it is devoid of all lining and all obstructions, being used for ventilation only. The concrete collar of this shaft is extended above the surface and provided with steel explosion doors. The air duct leading to the fan is below the surface and is concrete lined.

From a point near the air shaft a 7 x 12-ft. rock tunnel on a 30-deg. pitch is driven to the lower level. It is connected to the upper level by a short lateral tunnel and is used for lowering timber and other supplies. A concrete stairway separated from the track by an iron hand rail permits entrance and egress of employees. This slope is electrically lighted throughout.

At the entrance of this passage stands the check-house. Here record is kept of all employees entering or leaving the mine. Special checks are kept on hand ready for the use of company officials or visitors not on the mine register as no one is permitted to enter



Fig. 8—Rotary Dump in Action

This is a three-compartment dump, a car or rather a pair of them, being accommodated in each compartment. This device is gravity-operated and always contains either four empties or four empties and two loads.

or leave the mine without a record being made of this fact.

Development of this mine was begun in 1912. In that year 115,606 tons of coal was produced. Since Jan. 1, 1913, it has been operated double-shift and the output has increased year by year until 1924, when 1,159,400 tons was brought to the surface.

At this operation the combined boiler plant and pumping station is not considered as forming a part of the mine equipment. This is because it constitutes the main water supply for all plants of the company. Steam for the main hoist, however, as well as for heating purposes, is furnished from this boiler plant.

The main hoist has 28 x 48-in. cylinders, these engines being direct-connected to the drum shaft. The drum serving the upper landing is cylindrical, 8 ft. in diameter and grooved for 1½-in. rope; that for the lower level is conical, increasing from 9 ft. 6 in. in diameter at the small end to 12 ft. 6 in. at the large end. It also

is grooved for 1½-in. rope. This machine is equipped with steam reverse gear and steam brakes; it also has an automatic stop to prevent overwinding.

The hoist is housed in a suitable brick building which contains no other equipment as this might distract the hoistman's attention.

A well lighted and ventilated, slate-roofed brick power plant contains two 500-kw. motor generator sets supplying 250-volt direct current for mine use; also a 400-kw. 250-volt steam-driven direct-current generator for emergencies. This latter machine is kept under steam at all times and can be started in a few moments.

In order to reduce line losses another 500-kw. motor generator set has been installed at the second south escapeway. The underground transmission lines have sufficient capacity to permit operation of any two of these machines. Under normal conditions one of them is practically held in reserve ready for any emergency.

Fan drives occupy the southern end of the power house. Originally a steam engine drove the fan, but this has been replaced with motors and belts. The fan is now driven normally by a 150-hp., 60-cycle, alternating-current motor, with a 250-volt, direct-current machine of equal power in reserve. The repair shops are of brick with a slate roof carried on steel trusses. They include a machine shop, a blacksmith shop and an electrical repair shop. This latter is the central repair shop for all the coal mines of the company. It is well supplied with machinery for the repair of all the types of motors now in service. In the south end of this building an office is provided for the chief electrician and the superintendent of coal washeries.

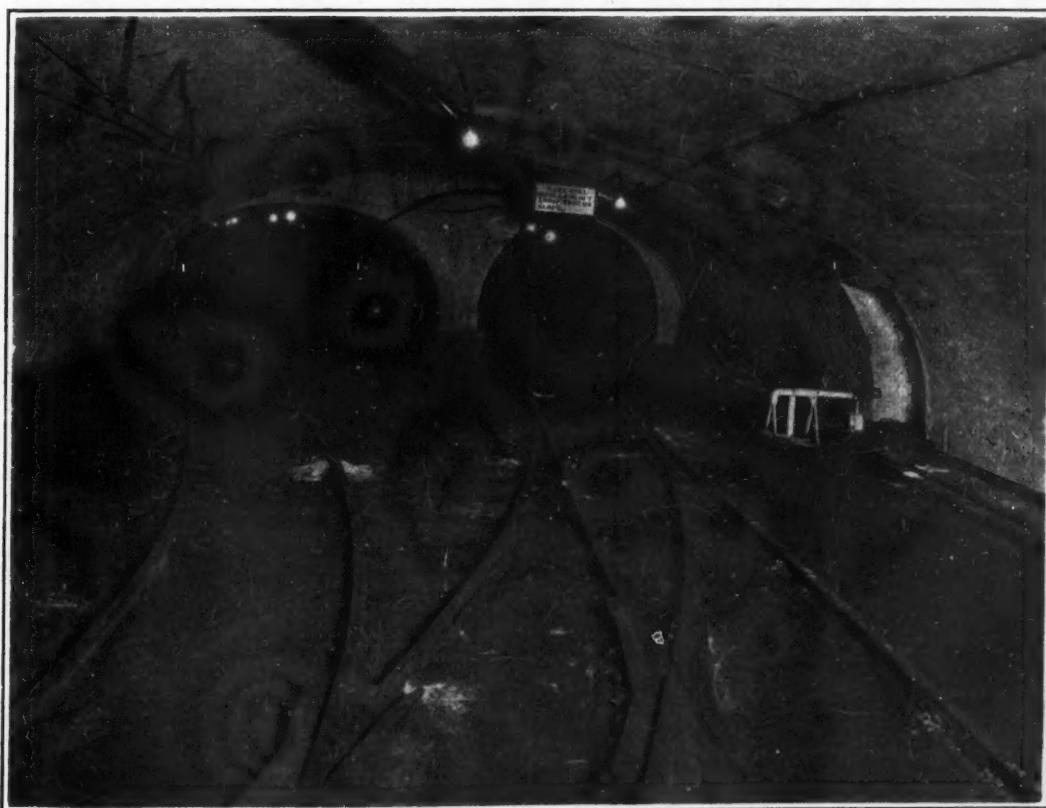
In the bath house, which is of brick with a slate roof, provision is made for 366 white and 510 colored employees. The bath and change rooms are separated by a solid wall the necessary openings in which are fitted with swinging doors.

A commissary and a lunch stand are located at the



**FIG. 9
Concrete Arching**

At the foot of the shaft the heading is well protected from all possibility of roof falls. The trackwork is also heavy and well laid. Any mishap in a place like this means a tieup of the hoisting shaft. It thus pays to make everything in the shape of tracks and roof supports solid, strong and substantial.



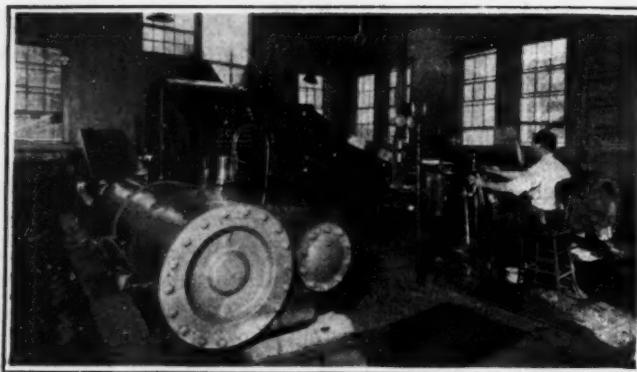


Fig. 10—The Main Coal Hoist

This hoist is peculiar in that it is equipped with two drums, one cylindrical and the other conical, each serving its own level. Although the electric hoist for mine use has made great progress during the past few years many operators still prefer the "old reliable" steam-driven machine.

southern entrance to the mine yard. The former has a self-service grocery and vegetable department and the latter provides lunches at all hours with special service at noon. It is liberally patronized by surface employees and others. Adjoining this building but outside the mine yard is an emergency hospital and dispensary. Here medical attention and the services of a trained nurse are available at all times.

At this mine the washery is of concrete and steel construction throughout. All settling tanks as well as the flumes under the floor are of reinforced concrete, as is also the building itself up to the floor level. All bins, tanks and the like above this point are of steel, no wood being used. The jigs are of the double plunger type with three 6-ft. cells equipped with Elmore revolving discharge valves. These machines make three products—washed coal, boiler fuel and refuse. The rated capacity of each jig is 55 tons per hour but if necessary 75 tons per hour can be effectively prepared.

The jigs are set on a concrete floor permitting ready access to all moving parts. At their tops steel operating platforms are provided upon which all electrical controls are mounted. Each jig is independently motor-

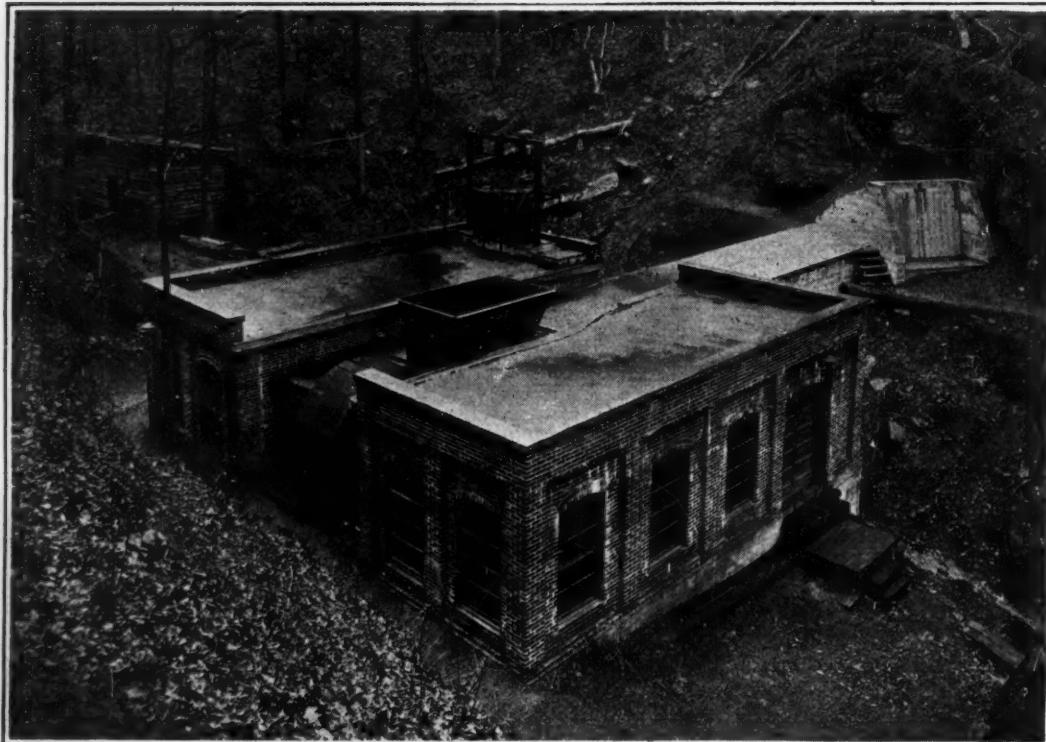
driven, eliminating all pulleys, belts and shafting and permitting the operation of any machine singly or all simultaneously. As four of these machines are installed the normal capacity of the plant would be 220 tons per hour. On one occasion, however, all of these machines were operated continuously at 75 tons per hour for 18 hr., making a total washery output of 5,400 tons for this particular day, the results, so far as quality was concerned, equalling normal.

From the tipple run-of-mine coal is brought to the crusher house by a 30-in. belt conveyor. Here it is delivered to two shaking screens with 1-in. perforations. The oversize from these screens goes to the crushers and that passing the screen bypasses them to an inclined belt to which the crushed material likewise is delivered. The normal size of the crushed product is $\frac{1}{2}$ in. and under and as the oversize rarely exceeds 10 per cent it does not affect the ultimate results.

From the crusher house the coal is delivered by a 30-in. belt conveyor to the raw coal bin where it is distributed by an automatic tripper. Rotary feeders deliver this raw coal to the various jigs. The overflow from the last cell of each jig is flumed to the washed coal settling tank whence it is transferred to the washed coal bin by a dewatering elevator. In like manner the refuse is collected from the first and second valves and the first and second hatches and is delivered to the refuse bin for disposal.

Circulating water from all settling tanks overflows into the main sump. From here a centrifugal pump transfers it to the cone-shaped sludge settling tank. The overflow from this tank is collected into the main pipe that supplies the jigs. By this arrangement the wash water is used over and over again, only the make-up being added. This amounts to about 12 per cent of the weight of the coal treated. Approximately $2\frac{1}{2}$ tons of water is in circulation for each ton of coal washed. A valve in the bottom of the cone-shaped sludge tank permits the sludge to be drawn off and shipped with the washed coal.

A concrete drainage pad extends along the railroad



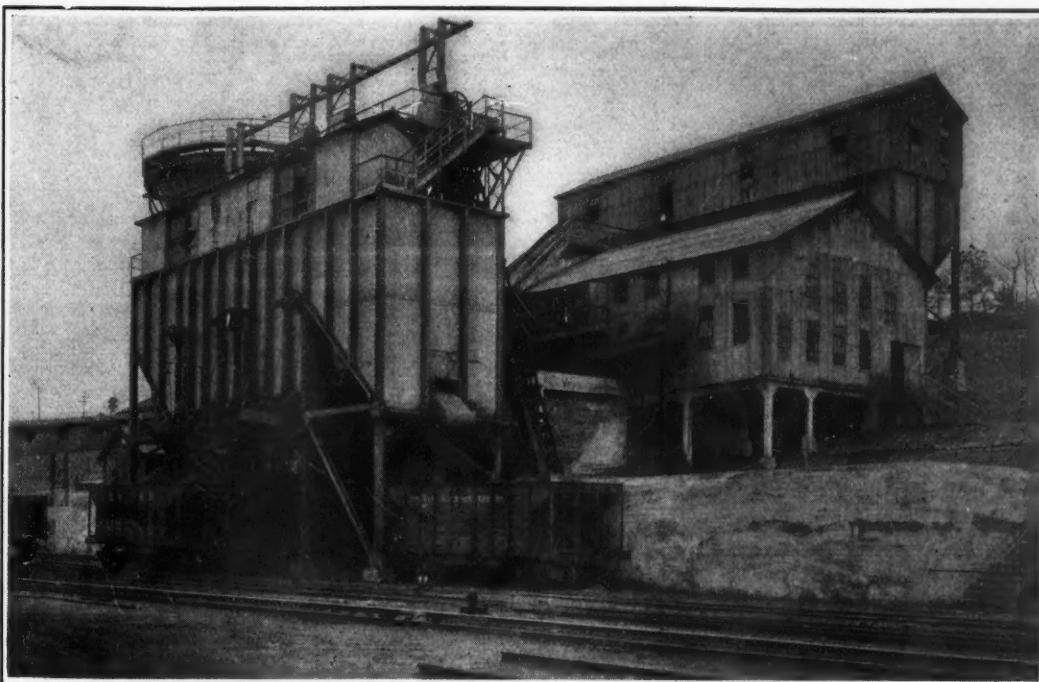
**FIG. 11
Escapeway Fan**

Either of two motors, one upon each side, may be used to drive this fan. These two motors are of equal rated horsepower but one operates on alternating and the other on direct current. Normally the alternating-current machine, operated on purchased power drives the fan. Should accident befall either this motor or the current supply line the other motor may be promptly started.

FIG. 12

Edgewater Washery

This unit of the mine plant is built of concrete and steel exclusively. Because of dirt or extraneous material that cannot be separated from the coal in the mines it is necessary to wash the entire mine product. That portion that is already small enough is sent direct to the jigs; the larger pieces are crushed down to suitable size. The wash water is used over and over again only the makeup being added.



tracks from the upper end of the bins to a point some distance below the washery. All leakage and drip from either the cars or the washery is collected in a small sump from which it is recovered and returned to circulation. This pad has proven of great advantage in keeping the tracks clean as all spillage from the cars can be hose flushed into the sump and from thence elevated into the washed coal settling tank.

When this washery is in operation all jigs and settling tanks as well as the main sump are full of water. When it becomes necessary because of accident or the necessity of cleaning out any of the various pieces of apparatus, the circulating water from the sludge tank is bypassed to a washout tank provided for the purpose. When the emergency is over a valve is opened and this water returns by gravity to the main sump.

During the year 1924, in treating 1,093,633 tons of coal the following average results were obtained: Washed coal, 82.35 per cent; boiler fuel, 6.72; "clean" refuse, 10.4, and washer loss 0.53 per cent. This latter item or washery loss is the quantity of clean coal that is carried away in the refuse. It is the content of the refuse that will float in a liquid of 1.37 sp.gr.

The following table sets forth the proximate analysis of the raw and washed coal and the boiler fuel.

Analysis of Washery Feed and Washery Products

	Volatile Matter Per Cent	Fixed Carbon Per Cent	Ash Per Cent	Sulphur Per Cent
Raw coal.....	27.32	60.43	12.25	1.56
Washed coal.....	29.30	65.96	4.74	1.22
Boiler fuel.....	25.89	58.34	15.77	2.70

Float and sink tests on the washery refuse gave the following average results: Float, in liquid of 1.37 sp.gr. 5 per cent, ash content, 4.9 per cent; sink in same liquid 95 per cent, ash content 65.94 per cent.

The valley of Camp Branch in which this mine is located is rather narrow and on account of occasional floods not well suited to modern village building. All houses, therefore, are built on higher ground where conditions are suitable and ready access can be had to the plant.

The mine plant divides the village into two sections, the southern portion being occupied by white and the

northern by colored employees. The same types of houses have been erected in both sections, but there is a larger proportion of two- and three-room dwellings in the colored than in the white section. All streets and alleys are graded and surfaced with chert or burned mine refuse. Ample ditches are provided to carry off heavy rainfalls. Substantial wire fences have been provided, all posts being set in concrete. Domestic water supply is obtained from the city of Birmingham, a special 8-in. line nearly four miles long bringing this water to the village. An outdoor hydrant is provided between adjacent houses. Fire hydrants are installed throughout the town and reels of fire hose and other necessary equipment located at convenient or strategic points.

Churches and schools are provided in each section of the village. Receptacles for garbage are placed in the alleys behind each dwelling and are emptied regularly by the sanitary department of the mine organization, their contents being destroyed in an incinerator. Altogether the village contains 604 dwellings, about 30 per cent of which are in the white and the remaining 70 per cent in the colored section.

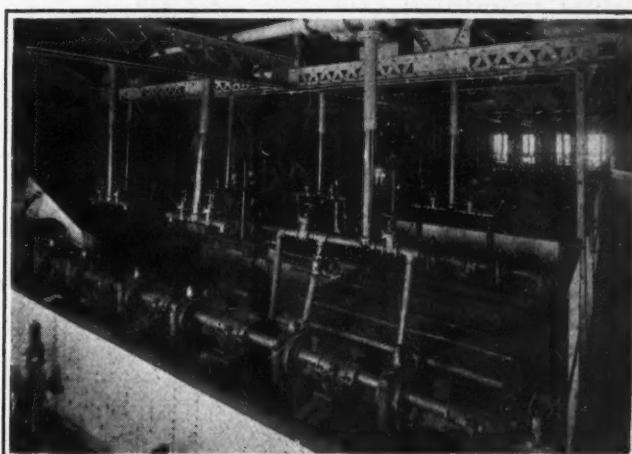
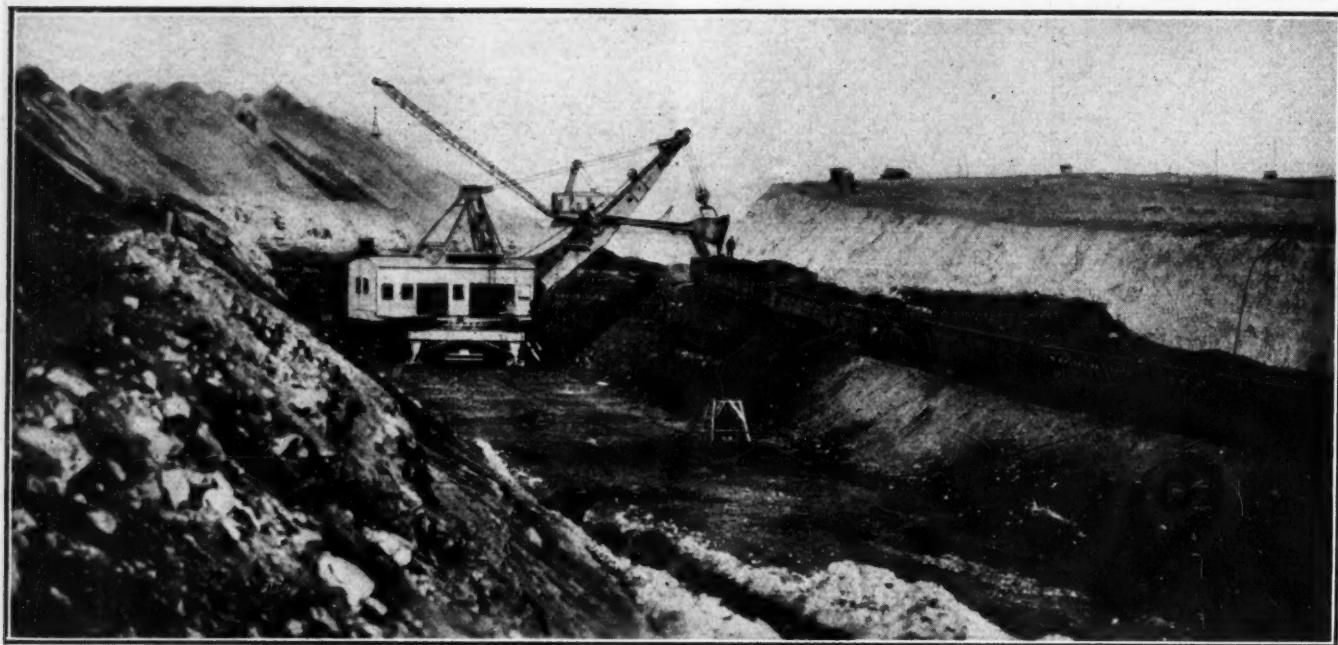


Fig. 13—Jig Floor of the Washery

Each jig makes three distinct products—clean coal, boiler fuel and refuse. The separation is remarkably effective even though in times of emergency these machines over long periods are driven well beyond their rated capacities.



Northern Pacific's new mine at Colstrip, Mont.

Colstrip Mine Is Country's First Electrified Pit

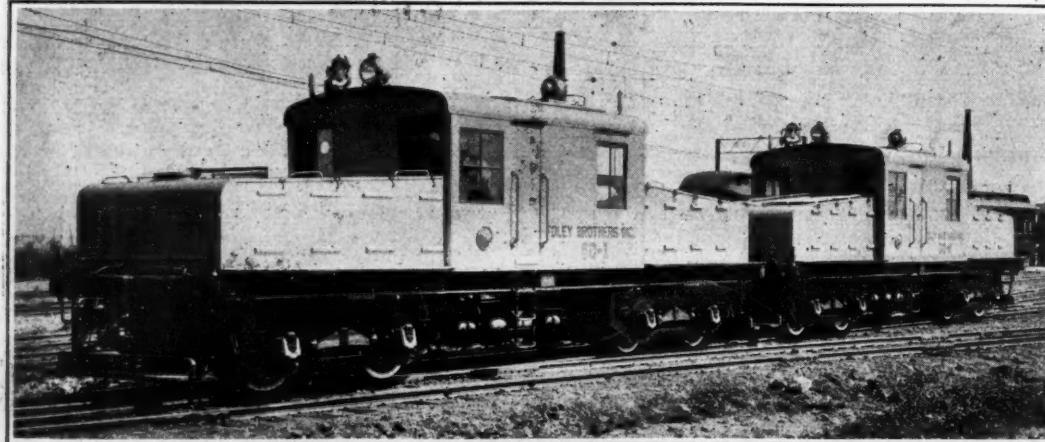
The first completely electrified open-pit coal mine in this country is at the newly-made town of Colstrip, approximately 35 miles south of Forsyth, Mont. The coal bed, about 180 acres in extent and 25 ft. deep, is owned by the Northwestern Improvement Co. and is being worked by Foley Bros., general contractors, of St. Paul, Minn. The coal is sub-bituminous with a heat content of about 11,000 B.t.u. The output of the mine will be used for the locomotives of the Northern Pacific R.R. in Montana.

As a result of a thorough study of the property, it was decided to utilize electricity in mining the coal. An extension of the Montana Power Co.'s 55,000-volt transmission line was made and complete electric equipment was purchased for stripping the overburden, mining the coal and hauling it. This equipment consists of an electric shovel, with a 155-ft. boom and 6-yd. bucket, used as a dragline excavator for stripping, equipped with Ward-Leonard control; a coal loading shovel with direct-current drive, and two 60-ton electric storage-battery locomotives. The locomotives are the largest storage-battery units in the coal fields. They are equipped with lead storage batteries of a special size and include a motor-generator set in the cab of each for charging.

During the time spent at the shovel while the cars are being loaded, a flexible cable, running from a bank of transformers on the shovel, is plugged into the locomotive for charging. While coal is mined from one strip, the overburden is removed from the next and is cast into the excavation resulting from the removal of the coal.

Many another stripping operation in older coal mining regions than this is using electric shovels both for removing cover and for loading coal into cars, but none is electrified as to haulage as completely as Colstrip. Since the fuel does not have to be put through a cleaning and sizing plant, the railroad spur is built into the pit so that coal is loaded directly into Northern Pacific cars. Trains of considerable length are handled in and out of the workings. Thus heavy motive power is necessary. The big storage battery locomotives were deemed to be the proper thing. They are successfully beginning their career of service.

Other operators of the few pits now working in the far West are watching the venture in electric mining with deep interest as, in fact, are stripping operators in other sections. The opening of the tract with the big shovels has also centered wide attention on the entire coal field in the Rosebud section of Montana.



They're Big Fellows

These 60-tonners now serving the completely electrified Colstrip operation of the Northern Pacific railway are the heaviest storage battery locomotives in use by any coal stripping company.

Rosebud Field in Montana Wins New Attention

Northern Pacific Stripping Pit at Colstrip Is Main Operation in 4,000-Square Mile Tract Producing Industrial Sub-Bituminous Fuel

By Thomas Edwin Smith
Forsyth, Mont.

THE Northern Pacific Ry. lately has commenced operations at Colstrip, 35 miles south of Forsyth in Rosebud County, Mont., where a bed of sub-bituminous coal 27 ft. thick is stripped and loaded by electric shovels and draglines. This operation is designed to produce eventually 5,000 tons of coal per day at a cost not to exceed 65c. per ton delivered to the railroad's main line at Forsyth. The railway has been using heretofore about 660,000 tons of coal per year from the Red Lodge mines which was costing about \$3.50 per ton so the benefit of the new operation should be large.

This operation directs attention to Montana coal. That portion of the field in which lies the Colstrip tract is roughly rectangular and is approximately 90 miles long and 60 miles wide with its southeast corner on the divide between Powder and Little Powder rivers on the state line. The overlap into Wyoming is more nearly triangular with the apex a few miles northeast of Casper. Over practically the entire area, one 20-ft. bed is found and in the interior of the field lie as many as 17 beds of coal 5 ft. or more thick. The field's area in Montana is roughly 4,000 square miles and in Wyoming perhaps 6,000 square miles.

Along Tongue River there are five beds more than 9 ft. in thickness. One bed 95 ft. thick has been opened up in the Wyoming portion of the field while beds of 40 and 50 ft. frequently are reported from drilled wells.

The six mines of the Sheridan Wyoming Coal Co. near Sheridan, Wyo., with a daily capacity of 10,000 tons are on one edge of this great field and the Northern Pacific stripping mine at Colstrip is on the other. There is a mine on Powder River near Broadus that is open for business all the year round and one on Tongue River near Birney that is developed to supply local trade at any time. A number of local banks, where some settler will blast out coal for his neighbors, operate during the fall and early winter months and there are a still greater number of open pits where the settlers go and strip the cover off the coal to supply their own needs.

RAILWAYS EXPECT TO REAP BENEFITS

The North & South Ry. under construction from Casper, Wyo., to Miles City, Mont., along Tongue River will traverse this field for more than 200 miles. The Chicago & Northwestern Ry. has announced the extension of its line from Belle Fourche, S. D., to Miles City, Mont., and that line will pass through about 20 miles of this coal region. The Chicago, Milwaukee & St. Paul Ry. is considering getting its fuel from there also and has already sent one party of officials to inspect the offered holdings. It is barely possible that within the next five years five railways and the Black Hills industries will get their fuel from this field at a cost of less than \$1 per ton. What effect this will have upon the camps of Red Lodge, Roundup and Sheridan with their union rate of \$8.39 per day remains to be seen.

The coal field in general is a plateau gently sloping



Clinker Masses Are Common in the Region

A great deal of the coal near outcrops in the Rosebud field is burned back for a considerable distance and the territory, in spots, is full of clinker such as this surface chunk near the engineer engaged in planetable surveying.

to the northeast and crossed by two river valleys, several long creeks and numerous gullies, many of which have cut through the entire series, thus making geological examination easy. The area is characterized by a more rugged topography than the area of Cretaceous rocks which surround it. The rocks are harder and more persistent; the hills are higher, larger and have steeper sides; the coulees are longer, deeper and have steeper sides. The hard gray and buff sandstones weather out in bold relief forming long, high almost unscalable cliffs. The higher portions of the field are called mountains by the inhabitants but they are merely remnants of a former surface set off by erosion.

SANDSTONE CLIFFS FORM CONTRAST

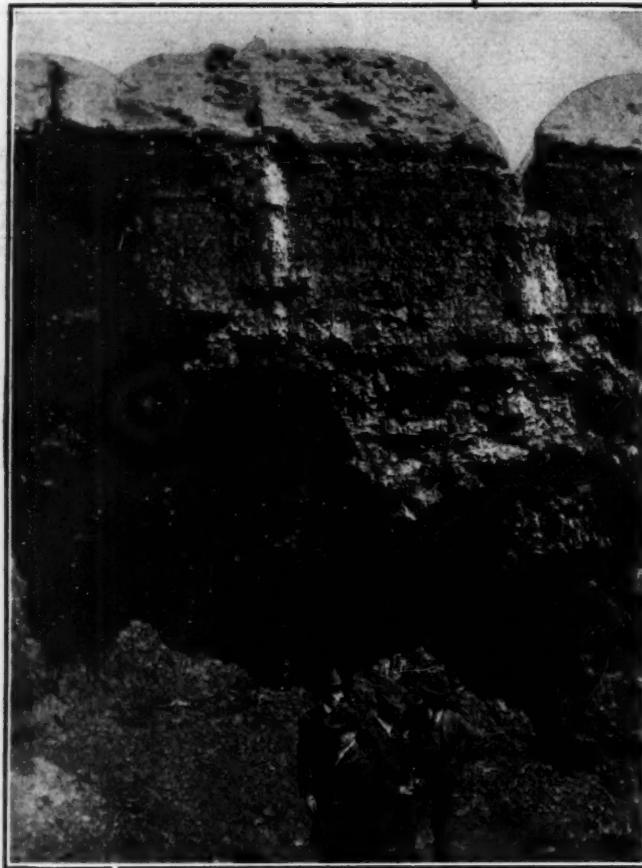
Clinker beds resist erosion better than the other rocks and form fairly level benches. Many of these terraces are farmed. Along the larger streams, erosion has isolated many clinker-capped buttes and these red and green, tree-capped mesas with gray and buff sandstone cliffs below are a pleasing contrast to the somber-colored beds outside the coal areas.

The maximum relief of the region near Colstrip is 750 ft. ranging from 2,950 ft. above sea level at the creek bottom at the north edge of the field to a maximum of 3,700 ft. at the top of the highest hill near the workings.

Drainage of the entire Montana area is into the Yellowstone River, either direct or by way of Tongue and Powder rivers and Sarpy, Armells, Rosebud, and Pumpkin creeks. The steep grade of the drainage courses renders the run-off of precipitation extremely rapid.

Climate of the area is typical of the semi-arid regions lying east of the Rocky Mountains. Summers are generally hot and dry. The nights are uniformly cool and a daily range in temperature of 65 deg. is common. Winters are only moderately cold except for a few days each winter when temperatures as low as 50 deg. below zero occur. The average winter temperature is above zero. Warm spells, during which nearly all the snow melts, occur nearly every month of the winter.

Precipitation averages 14 in. per year, coming usually at three periods: First, during May and June when about 5 in. of rain falls; second, during Septem-



Great Beds of Coal Are Available

This exposure on Coal Banks coulee, 5 miles south of Colstrip, where the great Northern Pacific strip is located, illustrates the character of the seam which underlies the territory.

ber and October when about the same quantity falls; third, during December and January when the greater part of the winter snow falls. There are generally several months in each year when there is no precipitation and for weeks at a time not even dew falls at night. Thus, stripping coal may not involve severe weather difficulties.

The whole coal field is a region of only slight deformation. There are slight undulations but examination of a wide area discloses a regional dip of about 25 ft. per mile to the south. The Bull Mountain geosyncline, one of the major structural features of Montana, passes through the field a few miles south of Colstrip. This is a wide gentle syncline which starts near Roundup, crosses the Yellowstone River near Custer and the Tongue River about 10 miles north of the state line. West of Colstrip a southeast plunging anticline causes the coal outcrop to widen away from the creek for about 2 miles.

The position of this field with respect to the syncline may be responsible for the relatively high degree of carbonization which characterizes this coal. David White, of the U. S. Geological Survey, in a personal communication expressed the idea "that great horizontal pressure, unrelieved by folding" has been responsible for the greater carbonization of the coals in the region of isolated mountain uplifts in Montana.

Nearly all the coals of this region have burned along the outcrop and back under cover until the fire was smothered by the weight of the overlying material caving down on it. Often the burned belt extends 10 or 15 miles back from the edge of the clinker and in one instance the nearest unburned coal is 26 miles south

of the furthest outlying clinker. Burning of the thicker beds has baked and fused the overlying rocks so that they can be readily recognized in the field by the clinker masses as shown in an accompanying illustration.

The coal of this field, according to the nomenclature adopted by the U. S. Geological Survey is sub-bituminous. While it is frequently called a lignite, such a name for it is incorrect. A lignite is a brown coal showing distinct woody structure and usually containing more than 30 per cent moisture. A sub-bituminous coal is black, has conchoidal fracture, homogenous structure and contains more than 10 per cent of moisture. The coals of the Tongue River group are remarkably uniform in weight, color, composition and behavior and do not classify as lignites.

BUREAU MAKES ANALYSIS

A large number of analyses of coal from this field have been made; one by the U. S. Bureau of Mines which is given in Press Bulletin 16,925 and copied here. The coal analyzed was taken from the Lee Coal bed, in the McKay mine which is about 12 miles south of Colstrip.

	Per Cent
Moisture	23.95
Volatile matter	28.7
Fixed carbon	40.3
Ash	7.1
Sulphur6
B.t.u. per lb.....	9,160
Moisture loss by air drying.....	8.4

A number of other analyses of this region's coal show heat values ranging from 10,643 to 12,755 B.t.u. per pound, ash content from 5.01 to 9.33 per cent and the moisture in air dried samples running from 6.2 to 7.24 per cent.

The bed being mined by the Northwestern Improvement Co. for the Northern Pacific Ry. yields a hard black coal burning to a white ash. This coal kindles readily but burns slowly except with a strong draft. It is not a good domestic fuel. In the fire pot of a heater or range the coal decrepitates rapidly and obstructs the flow of air through the fire. In a furnace, owing to the larger fire pot and stronger draft, it gives satisfaction. In a forge with a fire 6 in. deep and a strong draft it is possible to get a welding heat with it, but it is not a good smithing coal. Considerable oil readily can be distilled from it.

The Northern Pacific Ry. several years ago made a series of elaborate tests of this coal in both locomotives and stationary engines and the results were so satisfactory that it is being used now to the extent of 2,500 tons per day and the consumption is increasing steadily.

This coal slacks speedily upon exposure to the air owing to the loss of water and this slackening seriously affects the value of the coal. The rapidity and degree of slacking are intimately affected by the surrounding temperature. At 70 deg. F. a 4-in. lump of coal will crumble to pieces in 24 hr. At 55 deg. F. the same lump will last a week. At 40 deg. F. lumps of coal will remain hard and black for five weeks. At freezing temperatures and below, the coal will keep indefinitely. A thin layer of slack will form on the surface which will protect the coal underneath from the air. There is an enormous quantity of it available and its future as industrial fuel in the regions naturally tributary to this field is rosy.

Motor of 60-Hp. Hoists 1,200 Tons of Coal Daily

Aids West Kentucky Mine to Lower Its Hoisting Cost
—Use of a Balancing Sheave Cuts Down Size of Hoist
—Smaller Motor Decreases the Power Demand Charge

By J. H. Edwards
Associate Editor of *Coal Age*
Huntington, W. Va.

WHEN FIRE DESTROYED the tipple, headframe and hoist of the Crescent Coal Co. at Bevier, Ky., it dealt almost a death blow to a mine which long ago had passed its prime. The mine had been worked for a number of years before the Crescent company took it over in 1902. After the fire, which occurred in November, 1923, the owners of the mine took stock of their diminished coal resources and determined the maximum amount of money which they could afford to spend for new equipment to work out the remaining coal. Next in order bids were obtained for a new tipple, headframe, and electric hoist. The total bids for this equipment were much more than the allotted amount. As a result, ways and means of cutting the cost were carefully considered.

Out of this came the proposal for a change in the hoisting arrangement. The new plan, which is somewhat of a departure from the conventional method used in a double-compartment shaft with self-dumping cages, consists of mounting on the headframe, in addition to the regular head sheaves, a third sheave for balancing the dead load. Such an arrangement relieves the hoist drum and its shaft from a major part of the strain ordinarily imposed upon those parts. This method

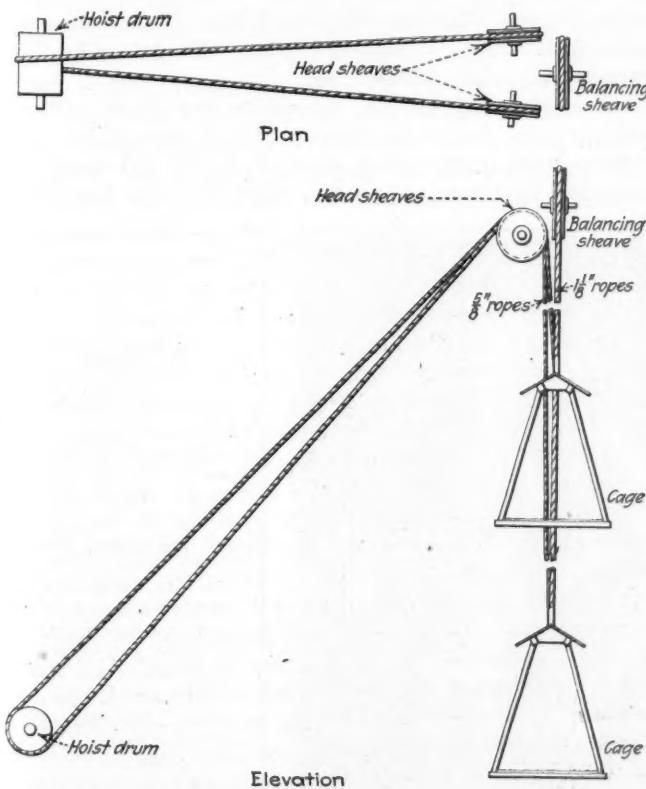


Fig. 1—Three Sheaves Mounted on the Headframe

The arrangement is the usual, except that the hoisting ropes are much smaller and there is added a balancing rope which is fastened to each cage and passes over a large sheave, the diameter of which is equal to the distance between centers of the shaft compartments.



Fig. 2—The New Tipple, Headframe, and Hoist House

This construction replaces the equipment destroyed by fire in November, 1923. The hoist house is the small building set below the supply track. The balancer sheave is the one which shows up plainly in the center of the headframe.

made possible the use of a smaller hoist so that the price was well within the appropriation. As a result, the installation was made and today there is being hoisted in 8 hr. with a 60-hp. motor, the regular mine production of 1,200 tons.

The sketch, shown in Fig. 1, indicates the arrangement in use at the Crescent mine. The hoist drum is of the short, cylindrical type, and the head sheaves are mounted at such angles as to converge the ropes to the point where the hoist is installed. The balancing sheave has a diameter equal to the distance between centers of the shaft compartments. Over this sheave passes a 1½-in. rope, the ends of which are fastened to the cages. The hoisting ropes, which are only 5/8 in. in diameter, are carried from the drum, over the head sheaves, and are fastened, also, to the cages. Thus, there are two ropes to each cage, one 1½ in. and the other 5/8 in.

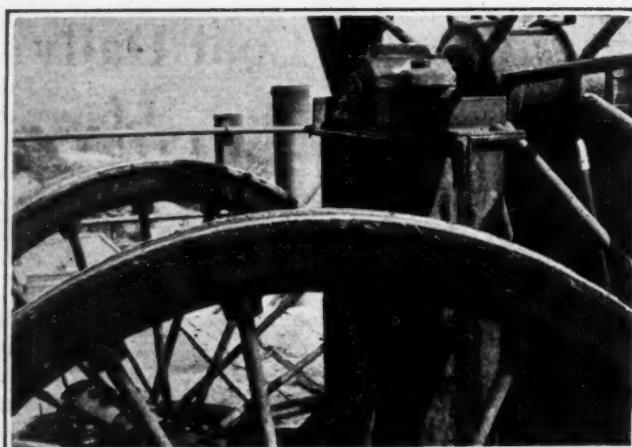


Fig. 3—Close-Up of Balancing Sheave Mounting

The center of the balancing sheave is mounted well above the top line of the two head sheaves. The former is 6 ft. in diameter and the others 5 ft.

A better idea of the sheave arrangement may be gained from the illustration shown in Figs. 2, 3 and 4. In Fig. 2 the small building underneath the supply track is the hoist house. Although the dimensions of this building are but 16x18 ft., the floor space is ample.

The hoist, which was made by the Ottumwa Iron Works, is shown in Fig. 5. The drum is 30 in. in diameter, has a 30-in. face, and is grooved for $\frac{1}{2}$ -in. rope. The electrical equipment, which is of General Electric manufacture, consists of a 60-hp., 440-volt, 600-r.p.m. wound-rotor induction motor fitted with a solenoid brake, and a semi-magnetic controller.

The use of such a small motor necessitates explanation as to the conditions, other than the use of the balancing sheave, which makes this possible. The shaft is only slightly over 40 ft. deep and the total hoisting distance is but 85 ft. The mine cars, which are hoisted on the cages, have an average capacity of only 1.25 tons of coal.

In addition to the balancing sheave feature, the hoist at the Crescent mine is unusual, in still another way. The operator of this hoist is stationed at the dump. This arrangement eliminates one man, and is other-

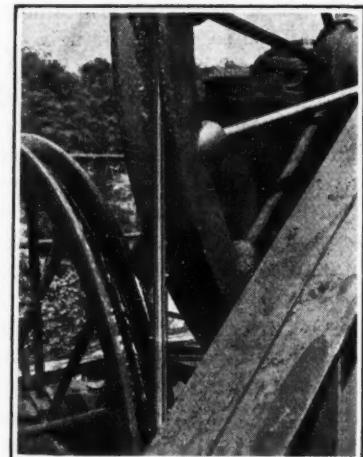
wise advantageous because of eliminating time lost in interchange of signals.

It has been found unnecessary to provide the operator with a means of applying the hand brake, which is shown in Fig. 5. The electric solenoid brake on the motor shaft, which brake is released or set as the controller handle, is moved to the first point, or to the off position, accomplishes all of the braking that is necessary. If it was desirable to use the hand brake, this could be fitted with a small steel cable for application from the operator's position at the dump.

The fact that the balancing-sheave arrangement has not been used before to any extent indicates that there must be some objections. One of these is that it is apparently impossible to protect the cage, against a broken hoist rope, by the ordinary safety-dog arrangement. Another is that the ropes must be kept closely adjusted as to length. At the Crescent mine, men are not hoisted on the cage, there being a man slope close

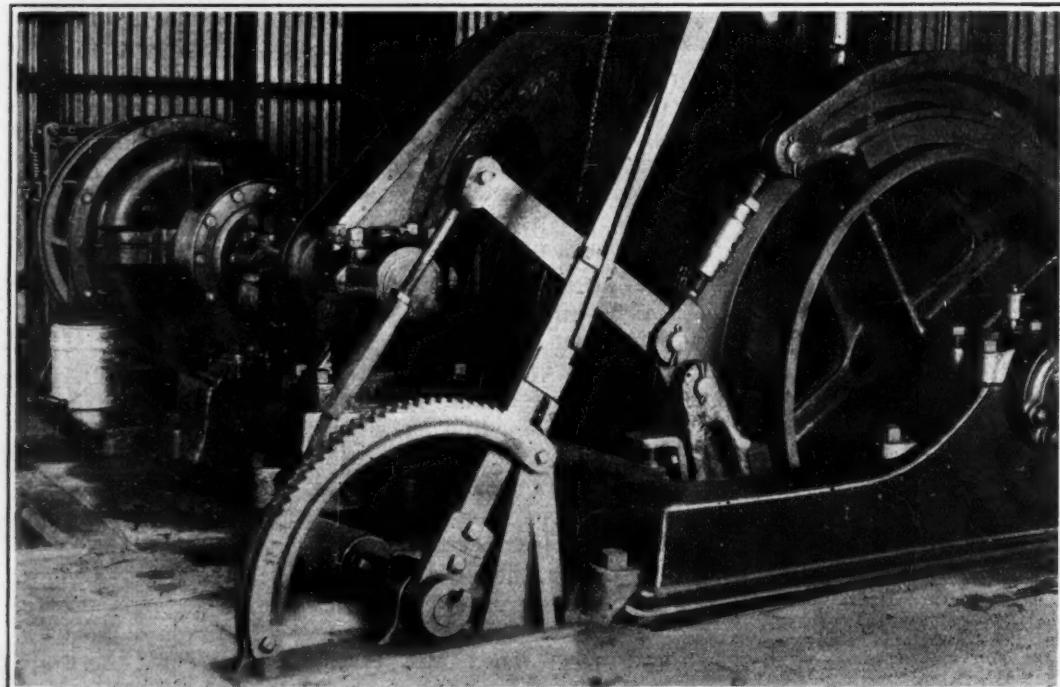
**FIG. 4
Balancing Rope**

This rope, $1\frac{1}{2}$ in. in diameter, can be seen in the center of the illustration. It parallels the $\frac{1}{2}$ -in. hoisting ropes from the sheaves to the cages. The balancing sheave is mounted higher than the head sheaves in order that the flanges may not interfere.



to the tipple. This condition and that of the shallow shaft obviates, to a certain extent, the necessity for absolute safety-dog protection.

The explanation of the necessity for close adjustment of rope length is, that when a cage is in the extreme dumping position none of its weight must be supported by the dump guides, otherwise this cage and



**FIG. 5
The Hoist**

An idea of the small size of the hoist and motor is indicated by a comparison to the size of the dinner pail sitting on the motor bed plate. The hoist drum is 30 in. in diameter, has a 30-in. face and is grooved for $\frac{1}{2}$ -in. rope. The hand brake in the foreground is not used. Braking is accomplished by the automatic solenoid brake seen on the far end of the motor.

empty car will not be exerting the regular balancing pull on the cage resting at the bottom. Such a condition would make it difficult, if not impossible, for the motor to start the hoist.

HOIST NOT LONG IN OPERATION

According to F. P. Wright, manager of the mine, the matter of rope adjustment is of small consequence, and should not cause delays. As to the speed of hoisting, Mr. Wright stated that the average is three trips in 80 sec., or 26 $\frac{2}{3}$ sec. per trip. He also called attention to the fact that although the hoist was installed in February, 1924, it actually has been used but a few months, so has not been given a very thorough trial. The mine was shut down from April 1, 1924, to February, 1925, on account of a strike.

In addition to the great saving in initial cost, the system used at the Crescent mine effects a marked

saving in the operating cost. The fact that the hoist drum and its shaft are relieved of the weight of the cage and mine car, makes it possible that these parts be of light design and, therefore, easy to accelerate. The use of a small motor effects a large saving in power demand charge, especially where the demand is based on connected horsepower, or in cases where there is a provision basing the charge on the instantaneous maximum demand. The energy portion of the power bill is also less; but the saving in this item is of little consequence.

Although it seems unreasonable to conclude that the use of a balancing sheave is new, it appears that no other installations of the kind are in use in coal mines of this country. For a mine of small to medium size with a shallow shaft the arrangement is well worth considering. It is rumored that two Illinois mines are contemplating such installations.

Risks of Thirteen Industries Exceed that of Anthracite

Twenty-One Groups More Hazardous than Bituminous Coal Mining—Larger Classes used in National Insurance

By R. Dawson Hall

Engineering Editor, *Coal Age*

IN THE classification of risks of the Associated Companies, used in Pennsylvania and in other states with percentage reductions, the classifications having listed rates are larger than in Ohio and only 222 in all. In consequence there are less industries rated as more hazardous than coal mining than in the State of Ohio, data regarding which appeared in *Coal Age*, Aug. 13.

There are thirteen industries more risky than anthracite mining and one with an equal risk (other mining than that of coal) and there are twenty-one more hazardous than bituminous coal mining and one with an equal hazard, namely, sewer construction.

In the list, however, are included barges, scows and lighters, both on the Great Lakes and on the ocean. Neither of these classifications come under the provisions of Act 455 of the laws of 1919 in Pennsylvania but that is, of course, of little importance. Omitted, however, are aircraft operation—commercial or private excluding demonstration, testing, instruction, public exhibit, trick or stunt flying—for which the compensation is \$230 per annum, and aircraft operation—demonstration, testing, instruction, public exhibit, trick or stunt flying—for which the compensation is \$368 per annum.

The barges, scows and lighters rate that has been taken for use in this table is the lower rate quoted and covers only such legal liability as may exist to pay workmen's compensation and liability to pay damages under the various laws of negligence as are applicable to accidents occurring as a result of these risks, this part of the coverage being limited to \$5,000. No reference is made in any enumeration to fishing vessels as the coverage rates on the basis taken for barges, scows and lighters is not published, but as the unclassified fishing vessels have a higher coverage rate of \$7.76 it is probable that the lower coverage rate which corresponds to that taken for barges, scows and lighters

is higher than the rate for anthracite and still higher than that for bituminous mining.

In view of the extreme hazard announced for anthracite mining by John L. Lewis, as a reason for a super-wage it is interesting to note how the risk appears to the calm judgment of insurance men who are backing their cold cash against that calculation. How much more convincing is the eloquence of financial investment than the oratory at the Hotel Traymore, in Atlantic City!

The list of occupational rates including those involving mining are as follows:

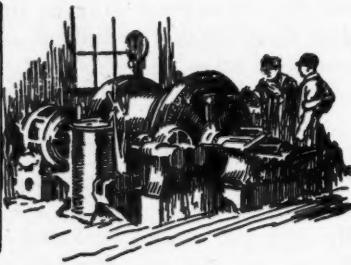
Compensation Rates of Associated Companies In Pennsylvania, 1925

Excluding Those for Occupations Less Hazardous Than Bituminous Coal Mining

	Per \$100 of payroll
Explosive manufacturing, N.P.D., including fireworks manufacturing	\$7.50
Building wrecking, raising and moving, including dealing in second-hand materials and salvage operations, all employees	6.00
Saw mills and logging, including logging railroad, all employees, except office	5.00
Roofing, N.O.C., N.P.D., with sheet-metal erection.....	3.85
Farm machinery operation by contractors: threshing, shredding, ensilage cutting, harvesting and hay baling, feed mill, incidental logging and portable saw mill operation, all employees, including farm and office, N.P.D.	3.35
Iron erection	3.75
Iron erection, N.P.D., tanks, gasholders, standpipes, water towers, smokestacks, chimneys	3.75
Pile driving, including timber wharf building	3.60
Junk-dealers, shop and outside, all employees, including office, N.P.D.; metal scrap, paper, rags, rubber and glass including smelting or refining of soft-metal scrap. Includes bottle dealers	3.50
Tunneling and shaft sinking, all work to completion	3.30
Fuse manufacturing, all kinds, all employees, N.P.D., including match manufacturing	3.00
Great Lakes barges, scows and lighters	3.00
Ocean-going barges, scows and lighters	3.00
Anthracite mining	2.75
Mining, not coal, all employees, except office	2.75
Quarries, not slate, including drill or stripping by contractor or operator and incidental stone crushing, cutting or polishing or lime burning including cement and clay quarries	2.70
Sand, gravel and slag excavation and crushing, no dredging, all employees except office	2.70
Amusement parks N.P.D.—all employees engaged in care, operation and maintenance, including ticket sellers and ticket collectors (includes baseball clubs)	2.50
Surface coal mining, including preliminary stripping operations by contractor or by operator, no shafts, slopes or drifts	2.50
Electric lines construction by contractors	2.45
Electric utilities operation, all employees except office	2.45
Sewer construction, all work to completion, including masonry work in connection therewith, no tunneling	2.35
Bituminous coal mining	2.35
Culm recovery, all operations N.P.D., with mining unless separate washery is operated	1.70
Coke burning, beehive	0.65
N.P.D. = no division of payroll.	



Practical Pointers For Electrical And Mechanical Men



Standard Switches and Curves Reduce Cutting and Bending of Rails

The Maryland Coal Co. has simplified its track work by avoiding as far as possible the necessity for cutting and bending rails. It lays short-radius switches and turnout curves in pillar work that are standard for the mine and can be relaid time and again without alteration.

The design of the standard switch is shown in Fig. 1. To lay the switch within the straight track *KLIA*, the rails are flared outward at *B* and *H* respectively. The section *BD* is a straight rail which is about 10 ft. long and bevelled at *B* to match the flare *BC*. The section *DJE* is a rail which is straight from *D* to *J* and curved from *J* to *E*. If the curve *DJE* is long it may be made in two sections. The straight section *FH* to the right of the frog *F* is about 15 ft. long and is bevelled at *H* to match the flare *GH* in the rail *GHI*.

In Fig. 2 is shown a pair of standard curve rails for use in pillar sections. To lay the standard curve *GHED* from the line *GD* in the straight track *FIJA*, rails *FI* and *AJ* are torn up and the rail *ABL* is flared at *B* to take the position *ABC*. Then the curves *GH* and *BDE* are set in place. Section *GH* is a standard curve rail with a bevel point at *G* and *BDE* is straight from *B* to *D*, and is bevelled

pointed at *B*. Where the curves are excessively long they may be made in two sections. Generally, however, the curve is short and when laid on steel ties the two rails may be moved as one unit.

Maryland Coal Co., ELKINS READ, Lonaconing, Md. General Supt.

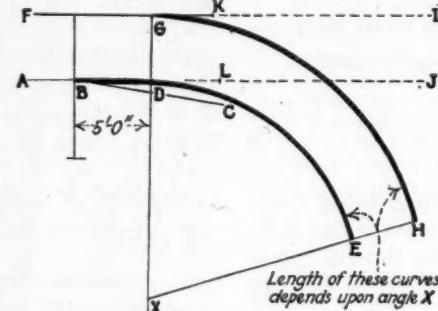
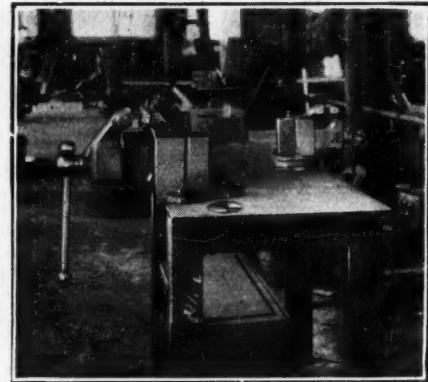


Fig. 2—Curve for Pillar Turnout

Once these turnout rails are curved they can be lifted and carried as a unit from one place to another and again relaid. In other words they are standard. The points *B* and *G* are bevelled so as to provide a satisfactory lead from the straight to the curved rails.

Heavy Vise Bench Aids Mine Machinists

Machinists employed in operating the heavier machine tools found in the mine shop, such as the larger lathes, planers and the like, often have occasion to use a vise. In order to be most effective, such a vise should be of fairly large proportions



This Bench Gets Much Use

In the course of a normal day's work in the bench is used repeatedly by the men operating the heavier machine tools such as the lathes and planers. It is not fastened to the floor in any way but its weight is sufficient to hold it in place under all ordinary circumstances. Its planed top forms an excellent surface upon which to lay out work.

and the bench to which it is attached either should be anchored to the floor or the walls of the building, or be of sufficient weight so that it cannot be readily moved by one man.

The accompanying illustration shows a heavy vise bench installed in the No. 4 mine shop of the Kingston Coal Co., Kingston, Pa. This is placed near several of the larger machine tools and is intended for use by the machinists who operate them. This bench is built entirely of iron and steel, the end brackets being of cast iron, while the top is a hard steel plate.

The end brackets on this bench were cast in a local foundry. The bench top was originally the cover plate of a coal pulverizer. When used for this purpose it was curved, but for the new use it was straightened out and planed true in the shop. It is now about 1 in. thick.

This vise bench is not attached to the floor in any way, but is sufficiently heavy so that one man can move it only with extreme difficulty. It, therefore, resists all ordinary efforts of the machinist in the course of his regular work. It securely holds both a 4-in. and a 6-in. vise, mounted upon opposite sides and at either end of the bench top. This bench is in frequent use.

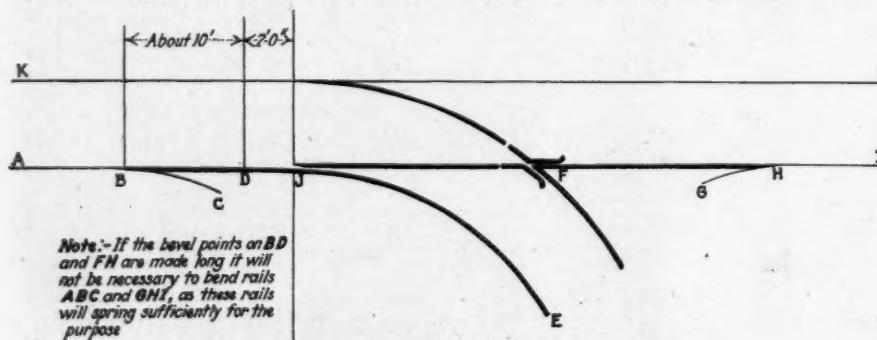
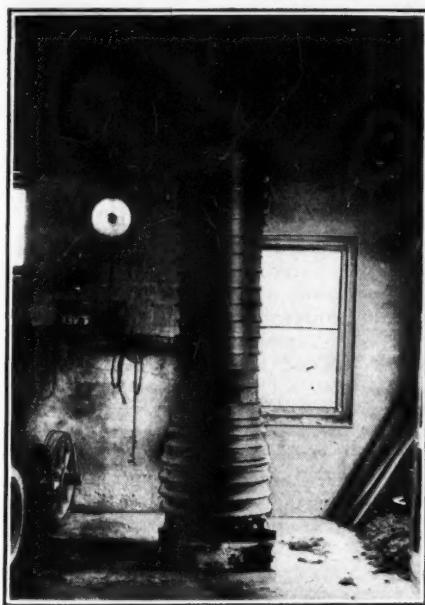


Fig. 1—Standard Short Radius Switch

In the Detmold mine, light rail switches are lifted and relaid as often as desired without requiring any alteration of the length or curvature of their various members nor is it found necessary to cut the straight rails of the regular track.

Tires Make a Freak Stove

A stove was constructed in the repair shop of the Warrior Coal Co. in McDowell County, W. Va., by stacking wornout locomotive tires from 6- to 10-ton mine locomotives on a grate of 20-lb. rails. The base was made up of 30-lb. rails. The door was formed by cutting out with an acetylene torch sections of two tires. The top is a piece of sheet iron in which is cut a flue opening. This stove is an ideal coal burner, having a large combustion chamber and a big radiating surface. On the coldest days it keeps comfortable the 20x50-ft. shop.



An Odd Stove, This

It is built of discarded locomotive tires with a base made of rail sections and a top of sheet iron. But it keeps a big shop warm.

There are Safe—and Unsafe —Ways to Lift Armatures

All mine electricians agree that armatures should be handled with care, but there seems to be a lack of agreement as to what is "care". The man who is experienced primarily in the repairing and rewinding of armatures knows that every possible precaution should be exercised to prevent the bumping of the commutator and coils, and that no appreciable weight should be placed on these parts. One slight bump, or the application of a concentrated pressure, may later cause failure of the armature and necessitate an expensive rewinding job. The accompanying photographs which were snapped during actual armature changes in mine locomotives, illustrate the regular practice at two mines, showing an old-style method and a new and safer method of handling armatures.

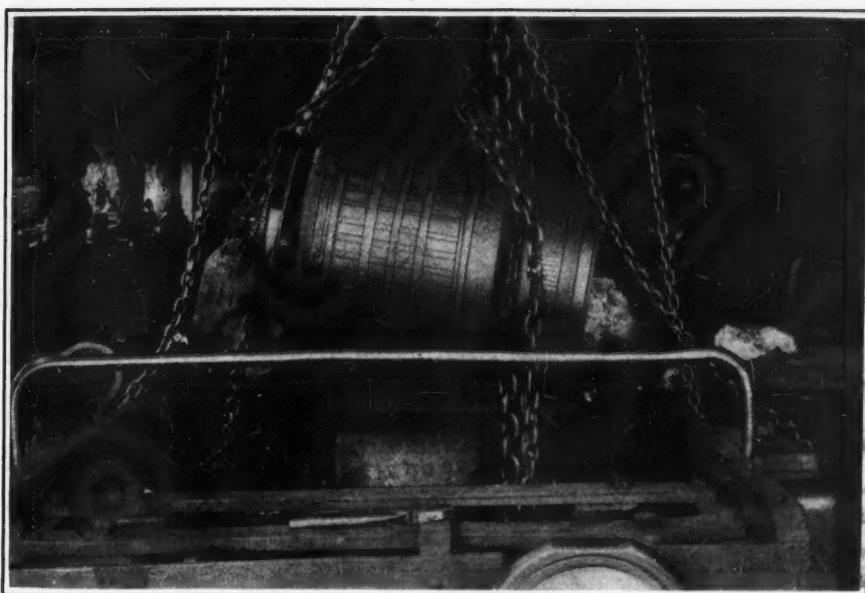


Fig. 1—Why Take a Chance Like This?

This armature is not a "dead one," as might be supposed from the method of handling. One end of the chain has a doubtful hold on the tapered end of the shaft, and the other end is looped around the commutator. At several points the chain is pressing tightly against the coils.

In Fig. 1 a ball-bearing armature of a 10-ton locomotive is being lifted by means of a chain sling. One end of the chain is hooked around the pinion end of the shaft in a rather insecure way and the other end is fastened around the commutator. For a portion of the circumference the chain rests on the coil connections back of the commutator, and no spreader is used to prevent the chain from pressing against their ends.

Inasmuch as the armature was to be lifted out of the bottom half of a split-frame motor, it could have been done by either of two common

ways which entail no risk of damage to the coils and commutator. One is by the use of a yoke engaging with I-bolts screwed into holes tapped into the bearing housings, and the other way by means of a lifting band.

Fig. 2 shows a plain-bearing armature being taken out of a 5-ton locomotive by the use of a steel lifting band. This band is sufficiently wide to hold the armature without any extra means of balancing. The removable-end type of lifting band is necessary for easy handling of armatures of splitframe motors.

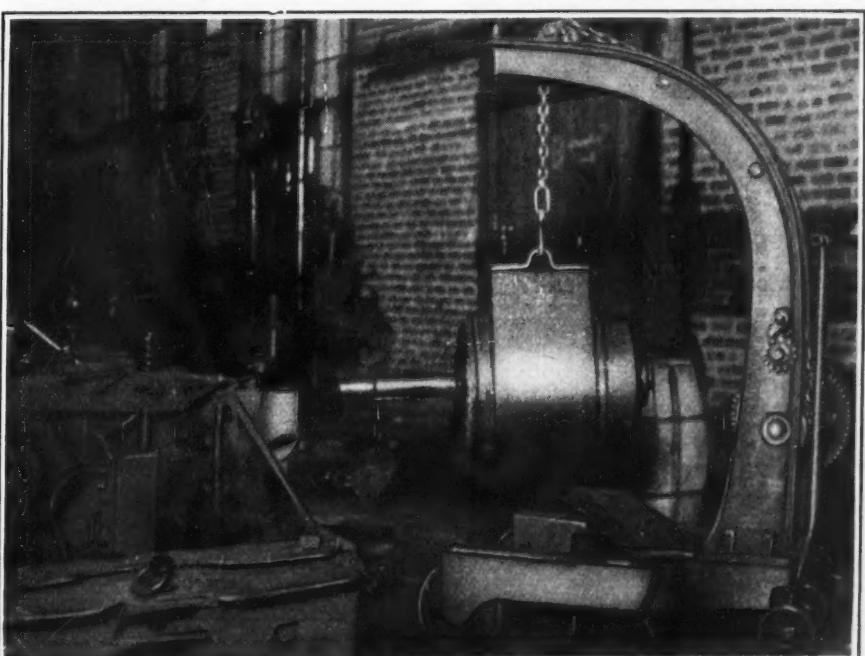


Fig. 2—A Band Is Much Better Than a Chain Here

This armature was just removed from the 5-ton locomotive at the left. Thin steel lifting bands with detachable end fastenings are of special advantage when removing or replacing armatures of split-frame motors. Handling an armature by means of a lifting band is but one of the approved ways commonly used.

News Of the Industry

I. C. C. Aids Smokeless Coal to Compete With Anthracite in Northeast

Orders Joint All-Rail Rates from West Virginia Taking Effect Oct. 15—Declines to Disturb Anthracite Rate Structure Which Miners Condemn So Loudly

By Sydney A. Hale

Special Contributor, *Coal Age*,
New York City

The way to more intensive competition between anthracite and semi-bituminous coals in the surviving strongholds of hard coal consumption was blasted open last week by the Interstate Commerce Commission when it ordered joint all-rail rates to the Northeast on West Virginia prepared smokeless coal. This is the outstanding feature of the decision in *Anthracite Rate Investigation*, 101 I. C. C. 363, the general inquiry instituted two years ago upon recommendation of the United States Coal Commission. That agency indorsed the persistent propaganda directed against the existing basis to the extent of suggesting a re-examination of the rate structure. The Interstate Commerce Commission now declares that it can find no ground for disturbing that structure; on the contrary, it sees good reason for letting the structure alone and contents itself with ordering the ironing out of mal-adjustments, arising, for the most part, out of its own decision of ten years ago, *Rates for Transportation of Anthracite Coal*, 35 I. C. C. 220. This will have no important effect upon anthracite rates generally.

The Commission, in setting out the results of its investigation, states that the Coal Commission left these two questions to be answered by the federal rate tribunal:

1. Can the high retail selling prices of anthracite coal be reduced through reduction of freight rates thereon which may be unreasonable or otherwise unlawful?

2. Should new rates be established for the purpose of facilitating the shipping and distribution of fuels to be used as substitutes for or to supplement domestic sizes of anthracite?

This second question, it will be recalled, was dragged into the original proceedings by an order issued November 6, 1923, "broadening the scope" of the investigation to include consideration of the rates on fuels other than anthracite to New England and Middle Atlantic states. Up to the time this second question was injected into the case, general interest in the hearings

had been something less than desultory. In fact, the only real attacks made upon the anthracite rates involved complaints against mal-adjustments and a plea of the independent operating interests for a reduction in the transportation charges on steam sizes. This plea is ignored in the decision handed down last week.

As before indicated, the Commission returns a decided negative to the first question. In so doing it effectively upsets one of the most attractive apple carts which the United Mine Workers has displayed for the edification of the coal consumer who has been wondering what all the parleys at Atlantic City have been about. Messrs. Murray and Lewis, as generalissimos of the union forces in the wage scale negotiations with the anthracite operators, have insisted in conference and in the public prints that a reduction in freight rates offered a method of meeting the wage demands embodied in the Scranton tri-district convention platform without increasing the cost of coal to the consumer. In fact, they went so far in talks with the newspaper men as to hint that the freight rates were so extortionate that not only could they be slashed deep enough to cover the wage demands, but that a commission investigation would result in reductions that would also leave something for the consumer.

Answers Second Question

The commission's answer to the second question is found in the order incorporated in the report in the case. Declaring that "freight rates effect total restraint of the shipping of coal from mines in West Virginia to points in the eleven Northeastern states north of Hagerstown, Md., and Washington, D. C." the commission gives the respondent carriers until Oct. 15 to establish joint through all-rail rates on lump, egg and nut coal from the Pocahontas, New River, Tug River and Winding Gulf districts to stations on the New Haven, Boston & Maine and Long Island railroads; to Pennsylvania R.R. stations, Tuxedo, Md. to deliveries at New York Harbor; Baltimore & Ohio

stations, Alexandria Junction, Md., to Philadelphia, Pa. The specific rate bases established are as follows:

1. To Pennsylvania R.R. stations, Tuxedo to Edgewood, Md., \$3.45 per gross ton; to Perryman and Iron Hill, Md., and points intermediate, \$3.70; to Newark Center, Del., and Brooklyn, N. Y., and points between said stations, rates not exceeding rates from the Clearfield district by more than \$1.10.

2. To Baltimore & Ohio stations, Alexandria Junction to Van Biber, \$3.45; Sewall to Barksdale, Md., \$3.70; Newark, Del., to Philadelphia, Pa., \$3.94.

3. To New Haven railroad stations, Portland to Chestnut Hill, Conn., Talcottville to Willimantic, Conn., North Windham, Conn., to Forest Hills, Mass., South Windham, Conn., to Oak Lawn, R. I., Attleboro, Mass., to Boston, Mass., \$5.58; to other New Haven stations named in Pennsylvania R.R. tariff AA-I. C. C. No. 1800, rates not more than \$1.10 per ton above Clearfield rates.

4. To Boston & Maine stations, Farley to Boston, Mass., \$6.70; to other Boston & Maine points specified in Baltimore & Ohio R.R. Co. Coal & Coke Series Tariff I. C. C. No. 2523, rates not more than \$1.35 in excess of those maintained by the Baltimore & Ohio from the Cumberland-Piedmont district.

Not Dictated by Administration

The answers thus returned to the two questions raised by the Interstate Commerce Commission in considering the recommendations of the Coal Commission have caused some enthusiastic Washington correspondents to declare that the decision of last week is part of the administration program for meeting the emergency threatened by the suspension of anthracite mining on Sept. 1. If we are to construe such declarations as the expression of a belief that the President or some of his associates told the Interstate Commerce Commission how it should decide this case, then we may safely charge them to the silly summer season. Too much furore was raised a few years ago when it was hinted that another President had whispered his desires to the Commissioners to encourage the belief that such an interpretation of the decision is well-founded.

However, external evidence strongly suggests that the commission has taken something akin to judicial notice of recent developments in the anthracite trade. We may even be justified in assuming that the members of the federal rate tribunal read in the daily newspapers the statements credited to union leaders at Atlantic City in which

these leaders claimed that freight rates could be cut deep enough to pay the increased wages they demand. There is a synchronization which subtly hints at this. The report in this case was submitted to the commission for decision in April, 1924. The decision was reached July 22, 1925—several days after Vice-President Philip Murray of the United Mine Workers had thundered to the high heavens because the operators declined to join the union in a petition to the commission for another investigation of rates.

The estimate of the operators that the miners' demands, if granted, would add at least \$2 per ton to the cost of anthracite still stands unchallenged. The commission's decision, however, stresses the desire of the consumers for a substantial reduction in retail prices. The idea that any reduction it might order would be absorbed in higher wages finds no lodgment in any part of the opinion in this case. In the face of the miners' demand for \$2 per ton, the commission declined to order a horizontal or percentage reduction which would have clipped 24 cents per gross ton off the price in Greater New York—the largest anthracite market in the country.

Upholds Anthracite Rates

The commission finds no warrant in the present record for holding all the rates on anthracite excessive, unreasonable or otherwise unlawful. On the contrary, it is of the opinion that "a horizontal reduction of all those rates, to an extent which could be reflected in an appreciable reduction of the retail selling prices would reduce the income of the several carriers of anthracite to an extent which would impair their credit, and, consequently, their ability to perform sufficient and satisfactory transportation service for the public. The record in *Transportation and Distribution of Anthracite Coal*, 77 I. C. C. 761 (the proceedings in which northern New York and New England interests sought an embargo on movement to Canada in the winter of 1923-24) is persuasive of the conclusion that impairment of the ability of the respondent carriers to perform expeditious and sufficient transportation service in connection with the distribution of anthracite coal might subject consumers to hardships which would outweigh any benefits resulting to them from a reduction in rates."

The report of the commission gives the carriers 90 days in which to correct voluntarily a number of existing mal-adjustments, involving the failure of the railroads to equalize rates via long and short routes. The commission, passing upon the plea for equalization, plainly states that it "cannot authorize equalization through any increase of rates," but expects "the carriers to reduce the higher rates on domestic sizes and sea applicable over the longer routes to the level of the rates applicable over the shorter routes between the same points, to the end that where the carriers maintained the same level of rates to given points prior to our order in *Rates for Transportation of Anthracite Coal* that parity of rates shall be restored."

These changes, however, are only



D. J. Price

Formerly engineer in charge of development work in the Bureau of Chemistry, U. S. Department of Agriculture, he has resigned to take up commercial work with the Mine Safety Appliance Co., Pittsburgh, Pa. He takes up his new work Sept. 1. During the past eleven years Mr. Price has carried on important investigations on the causes of dust explosions and means of prevention and control. In this period a number of industries, notably flour milling, have greatly reduced the risks of losses from this cause.

local: they will not effect or rechart the course of the general streams of distribution. The order with respect to joint through rates on semi-bituminous coal from southern West Virginia, on the other hand, promises to have a marked influence upon the distribution factors in the Northeast and the Middle Atlantic states. These states are the heaviest consumers of anthracite coal, using in recent years over 70 per cent of the domestic anthracite tonnage shipped. These states have been the least responsive to efforts to introduce competitive fuels. Even in times of shortage, there has been a disposition in New England and in the Middle Atlantic region to hold off until the last minute before turning to substitute fuels.

Competitive Fuels Gaining

And yet, despite this ingrained preference for anthracite coal, competitive fuels have been making steady, if slow, inroads upon the market in those states. It has been estimated that fuel oil has replaced about 5,000,000 tons of hard coal—chiefly in domestic heating plants and, for the most part, in the New England and Middle Atlantic states. One New Jersey coke plant is distributing approximately 300,000 tons of by-product coke per year to former consumers of anthracite. Coke ovens in other parts of this territory are extending their markets and new by-product plants are springing up. And where the rate adjustment has made it possible and the producer has been willing to combat prejudice, semi-bituminous and bituminous coal has been making headway.

New England's bituminous and semi-bituminous coal consumption today far exceeds its anthracite demands. In

1924, for example, the anthracite receipts were 11,909,000 net tons; bituminous, 18,894,000 tons. Of course, industrial consumption accounts for the greater part of the bituminous tonnage, but not all. And that industrial consumption in many cases means business that has been lost by the small sizes of anthracite. Particularly is this true of fuel for heating large office and apartment buildings.

During the first six months of this year, bituminous tidewater shipments to New England approximated 6,256,127 net tons. Of this total, 5,251,608 tons moved over the Hampton Roads piers and 327,166 tons moved through Baltimore. By breaking down the Chinese rate wall against the all-rail movement of prepared sizes of low-volatile coal, witnesses before the commission estimated that approximately 500,000 tons per month could be put into the New England and Middle Atlantic states over all-rail routes. Under the combination rates which the commission now outlaws, the rates to New England points exceeded through rates from the Gauley district by \$3.76 to \$4.77 per ton. The commission, however, declined to adopt the Gauley rates as standard, holding they were depressed. But in ordering the basis it did, the commission had in mind removing situations such as the one at Boston where "the combination rates on New River coal exceed the retail selling price of that coal."

Promotes Competition in Soft Coal

While the commission, as its second question shows, was concerned with broadening the market for substitutes for anthracite, its decision will also have the effect of intensifying competition between the various bituminous districts making a bid for the favor of New England and the Middle Atlantic states. The low-volatile regions of Pennsylvania and Maryland have long enjoyed through rates to a large majority of the points of consumption in these states and some of the producers so favored have already completed the pioneering steps in building up a domestic market. Typical of the rate basis in effect are rates of \$3.09 to Newark, N. J., \$4.48 to Fall River, Mass., \$4.10 to Hartford, Conn., and \$4.22 to Boston and Springfield, Mass.

Up to a certain point, these all-rail rates from central Pennsylvania have given the Pennsylvania producers an advantage in meeting the competition of West Virginia coal moving rail-ocean-and-rail to interior points. Now, the West Virginia smokeless fields are given an all-rail avenue, although at higher rates.

The order in the present case is limited to rates from mines producing low-volatile coal and served by the Chesapeake & Ohio, Norfolk & Western and Virginian railroads and feeders and to the prepared sizes.

If the order of the commission stands and there are signs that West Virginia is profiting from it, there will be a host of other producers clamoring at the gates in Washington for rate changes which will work to their particular benefit. The decision in *Anthracite Coal Investigation* is not the last word: it is only the beginning of the chapter.

Engineers Seek Legislation For Water Development

The Secretary of the Interior on Aug. 12 was urged by a committee of the American Engineering Council to support legislation providing for an inventory of the water resources of the United States. A bill has been drafted by the Engineering Council which provides that such a study be made by the Geological Survey. Those who discussed the matter with Secretary Work were William McClellan, chairman of the committee; Wilbur Nelson, until recently state geologist of Tennessee but now state geologist of Virginia; Col. J. H. Finney and L. W. Wallace.

The bill, which will be introduced at the next session of Congress, provides for the carrying out of "a comprehensive plan for developing both surface and ground waters for domestic and industrial supplies, irrigation, navigation, power and other uses and for the conservation and control of flood waters." It provides for co-operation with the states to those ends and suggests that the federal government expend \$500,000 annually for twenty years for its part of the work.

Central Pennsylvania Output 70 per Cent Non-Union

Out of 1,000 coal mines in the central Pennsylvania bituminous field, but 400 are in operation, according to Charles O'Neill, secretary of the Central Pennsylvania Coal Producers' Association. Of these, not all are running full time and the larger number in operation are on the 1917 scale basis.

In the Black Lick region all the mines are operating union except two at Nant-y-Glo, where non-union output exceeds union. All mines on the Cambria & Indiana R.R. branch are operating non-union and in the Barnesboro region two mines have shifted to the 1917 scale. In Clearfield County practically all mines are union, while on the Tyrone division and in the Snow Shoe district on the Pennsylvania R.R. the mines are all returning to the 1917 basis. In the New York Central R.R. district all the mines east of Clearfield are non-union. In the Philipsburg district all mines at work are non-

Union Officials Wounded In "Wild Cat" Strike

An attempt by sub-district officials of the United Mine Workers to protest a "wild cat" strike at Zeigler, Ill., Aug. 12, resulted in a riot in which Lon Fox, president of sub-district No. 9; E. C. Cobz, vice-president of sub-district No. 9, and Hezzie Hindman, president of the West Frankfort Trades and Labor Assembly, were severely wounded. One miner was fatally injured and a score of others hurt during the rioting that came as a culmination of the three-day outlaw strike.

When the strike was called by the local union without approval of the sub-district chiefs, the Zeigler union heads were deposed by the sub-district officials. The appearance of the officials at a meeting of the strikers incited the riot. Fox and Cobz were beaten and stabbed and Hindman received a bullet wound. Three arrests have been made by the Zeigler authorities, who have the situation well in hand.

union with the exception of Winburne and Grassflat. In the Allegheny Valley, extending from Kittanning to Brady's Bend, all the mines along the Pennsylvania R.R. are working on the 1917 scale, and the same is true of all the mines on the Pittsburgh & Shawmut R.R. The district is producing 50 per cent of its normal production, 70 per cent of this by non-union mines.

A bond issue is being floated by the West Virginia-Pittsburgh Coal Co., of Brooke County, W. Va., in the amount of \$850,000. The treasurer of the company makes the statement that the property is valued at \$2,606,602. Net earnings of the company available for depreciation, depletion, interest and federal taxes for the five years ended Dec. 31, 1924, have averaged \$252,500, or two and one-half times the total annual interest and sinking-fund requirements.

Business Publishers Unite In Export Field

Establishment of the Business Publishers International Corporation to meet more adequately the demand for specialized business publications in the fields of overseas trade and industry was announced Saturday, Aug. 15, by the McGraw-Hill Company and the United Publishers Corporation. They jointly will control the new organization.

Three publications already in existence form the nucleus of the new company, which will maintain editorial and business representatives in the important commercial centers abroad. The papers are *Ingenieria Internacional* (International Engineering), a McGraw-Hill industrial and engineering monthly circulating in Spain and Latin America; *El Automovil Americano* and *The American Automobile* (Overseas Edition) in Australia, New Zealand, South Africa, India, Great Britain, Norway, Denmark, Holland, Belgium, in the Orient and other territories.

The new corporation is headed by Mason Britton, president. He is vice-president of the McGraw-Hill Company. John Abbink, until the formation of the new publishing firm, business manager of *Ingenieria Internacional*, is vice-president and general manager. J. L. Gilbert, who was business manager of the two automotive publications, is vice-president and secretary. C. A. Musselman, president of the Chilton Class Journal Company, the automotive publications division of the United Publishers Corporation, is treasurer.

Ohio River Too Low for Heavy Movement of Coal

Low water in the Ohio River throughout its length practically has stopped coal movement in the lower river. Four towboats with 40,000 tons of coal moved as far south as Cincinnati, O., on an artificial rise in the Ohio, arriving at the Queen City, on Aug. 8, when the artificial wave was caused by releasing water from behind dams in upper stretches of the river. Two additional tows of 20,000 tons were to come in from Portsmouth, O., on a small wave. Some of this coal is for Louisville, Ky.

Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of July

(In Net Tons)

Ports	Railroads	1925			1924			1923		
		Cargo	Fuel	Total	Cargo	Fuel	Total	Cargo	Fuel	Total
Toledo	Hocking Valley	4,140,696	119,047	4,259,743	3,123,137	92,469	3,215,606	2,314,486	69,256	2,383,742
	Big Four	740,933	3,573	744,506	1,375	46	1,421			
	N. Y. C.-Ohio Central Lines	421,025	33,758	454,783	27,095	1,055	28,150	817,014	25,428	842,442
	Baltimore & Ohio	1,535,976	47,939	1,583,915	768,400	25,778	794,178	1,233,115	36,349	1,269,464
Sandusky	Pennsylvania	2,505,212	75,425	2,583,637	1,299,469	39,916	1,339,385	1,398,824	42,331	1,441,155
Huron	Wheeling & Lake Erie	361,804	16,207	378,015	365,880	17,686	383,566	718,221	26,586	744,807
Lorain	Baltimore & Ohio	327,343	63,022	390,365	795,192	64,967	860,159	1,511,966	86,094	1,598,060
Cleveland	Pennsylvania	117,804	79,779	197,583	642,975	84,111	727,086	906,827	83,495	990,322
Fairport	Erie	18,138	1,252	19,390	151,289	5,618	156,907	475,844	20,649	496,493
Ashtabula	Baltimore & Ohio	226,608	44,302	270,910	240,717	45,656	286,373	326,908	32,708	359,616
Conneaut	New York Central	144,524	48,296	192,820	467,889	55,317	523,206	1,854,363	121,693	1,976,056
Erie	Pennsylvania	262,413	36,609	299,022	525,338	41,553	566,891	1,020,053	42,721	1,062,774
	Bessemer & Lake Erie	570,796	114,060	684,856	834,364	113,034	947,398	1,394,998	98,505	1,493,503
	Pennsylvania	84,613	26,127	110,740	245,541	37,645	283,186	311,596	39,842	351,438
Totals		11,457,889	709,396	12,167,285	9,488,661	624,851	10,113,512	14,284,215	725,657	15,009,872
Storage Loading		133,017	1,048	34,065	*182,060	4,940	187,000			

*Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.

†Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.

Includes 5,195 tons cargo 673 tons fuel diverted from Lorain, B. & O. Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

Though Gulf Widens Between Miners And Operators Federal Intervention Is Still Only a Remote Possibility

By Paul Wooton

Washington Correspondent of *Coal Age*

As the breach widens between the anthracite operators and their men and as the possibility increases that the union bituminous field may become involved indications still are that federal intervention is going to be withheld more firmly than ever before. If there be federal action it is more likely to come from Congress than from executive officials. Even Congress is slow to take a hand in an industrial dispute, but it may have an opportunity to thrust in its arm earlier than Dec. 7, as the pressure for an extra session, so that tax revision may be taken up, is becoming increasingly great.

The administration will be less inclined than even to mingle in the affairs of private business, even in the simplest rôle of counselor, since Secretary Hoover's experience with the Jacksonville agreement.

Observers in the executive departments, representing as they do the whole public, are disinclined to criticize either party to the existing controversy, but coal specialists outside the government service are frank in expressing the opinion that the mine workers are deliberately picking a quarrel. They believe Mr. Lewis' position with regard to the attendance of S. D. Warriner and W. J. Richards is untenable. There is general concurrence in the view that one party to a wage negotiation may not dictate who shall represent the other side any more than one party to a business deal may pick the men with whom they will confer.

Hold Miners Responsible

On the other hand, those familiar with these and previous negotiations do not blame Messrs. Warriner and Richards for feeling that life is too short to expend it arguing with those who do not intend to be convinced at any cost. It is idle to speculate as to what Messrs. Warriner and Richards have in their minds. The plain fact is that the negotiations have been broken off and the mine workers have to shoulder the responsibility for the break. Nothing they can say will make the public think otherwise.

The anthracite decision of the Interstate Commerce Commission has taken the wind out of Mr. Lewis's sails in the matter of the joint application for reduced freight rates. It hardly is supposed that he will renew his proposal as it obviously would be hopeless to go before the Commission seeking a rate reduction when it just has been over the ground and has made a decision.

The decision also supports strongly the contentions of the operators that they are facing permanent loss of market. While the all-rail rate on smokeless coal is more than the water rates to seaboard and some interior points, the additional cost, however, is declared

to be much more than offset by the lack of breakage which occurs when the coal is loaded in West Virginia and moves in the same car to destination in New England. If the coal goes by water with attendant handling on and off ship, a high percentage of fine coal inevitably results. More significance than heretofore is attached to efforts to establish that the bituminous contract also is involved, but it is noted that the public is not being stampeded. The Atlantic City story has been palling steadily, judging from the newspaper space accorded it.

Gowen Mines Leased to Roberts Syndicate

A syndicate headed by Graham Roberts, of Philadelphia, has leased for twenty years the Gowen No. 1 and No. 3 collieries, which have been operated by Coxe Bros. & Co., Inc., for the past forty-five years. The lease was given by the West Buck Mountain Coal & Iron Co., owners of the land, who had invited bids from several large operators, including the former lessees.

The property consists of more than four thousand acres in Luzerne, Schuylkill and Columbia counties, at the western end of the Big Black Creek coal basin, about thirteen miles west of Hazleton, Pa. The operations produce Buck Mountain seam coal. The new operators intend to increase the annual production and operations will be started as soon as the details of the lease are completed.

Mr. Roberts has associated with himself, among others, David E. Williams, Jr., of the firm of David E. Williams & Co., miners and shippers of anthracite and bituminous coal, with headquarters in Philadelphia; S. J. Livingston, of Philadelphia, president of the Seaboard Coal Mining Co., and J. E. Altmiller, W. P. Millington and C. H. Altmiller, mining engineers, of Hazleton. The new firm will operate under the name of the Buck Mountain Coal Co.

Roads Drop Coal Holdings

Segregation of the Lehigh Valley Railroad Co. and the Lehigh Valley Coal Co. is 76 per cent complete and "excellent progress" is being made in separating the Reading Company from its coal holdings, according to an announcement by the U. S. Department of Justice on Aug. 11. The two railroad companies were ordered by court decrees to divest themselves of all coal properties, and when the dissolution processes have been worked out, the announcement said, "there will be a complete separation of ownership, management and control between the several anthracite carriers involved and their former subsidiary coal companies."

Engineers Say "No" Again

The United Mine Workers have quit trying to convince their labor-union brethren, the Brotherhood of Locomotive Engineers, that the Coal River Collieries Co. mines in West Virginia ought to get back on a union basis and work under the Jacksonville agreement. Negotiations looking toward that end have been abandoned, according to William H. Thompson, secretary of District 17, who, with Percy Tettlow, president of the District, has been in lengthy conference with President J. W. Dunigan and Sales Manager C. C. Huffman, of the coal company owned by the Brotherhood. The miners' union has been driving against the non-unionism of the Brotherhood mines ever since the late Warren S. Stone, president of the engineers' union and head of the coal company, refused to accept the Jacksonville agreement and announced his company had to operate non-union or quit. However, in spite of the coal company's recent final and absolute refusal to commit corporate suicide at the request of the United Mine Workers, Mr. Thompson said, "we cling persistently to our view that the Jacksonville wage agreement is just, right and equitable."

Utilities Consume More Coal In June Than in May

Public utility power plants in the United States consumed 3,101,656 net tons of coal in June, according to a report by the U. S. Geological Survey. This compares with 2,965,155 tons in May, as shown by revised figures. Fuel oil consumption by utilities in June totaled 774,544 barrels, compared with 675,393 barrels in May.

The average daily production of electricity by public-utility plants in June was 173,500,000 kw.-hr.—about 3½ per cent larger than the average daily output for May.

Since the rate of output of electricity by the use of water power decreased from May to June, due to the usual seasonal decline in the flow of streams, the increase in the average daily rate of the production of electricity by the use of fuels was most pronounced. This marked increase in average daily output in June, as compared with May, may be due in part to an increase in the demand for power and in part to there being one more workday in June than in May, even though May is a 31-day month.

Sealed proposals will be opened by the Superintendent of Lighthouses, Staten Island, N. Y., at 2 p.m., Aug. 24, 1925, for approximately 1,800 tons of bituminous coal, in quantities as required from Oct. 1 to Dec. 31, 1925, delivered and trimmed into bunkers of lighthouse vessels, under coal chute at contractor's pocket, New York. Further information will be given on application.

Lewis Calls His Soft-Coal Captains Into Conference; No Anthracite Break Yet

John L. Lewis and his chief aides in the United Mine Workers met at the Bellevue-Stratford Hotel, Philadelphia, Pa., on Monday of this week. A long, secret conference was followed by the "explanation" that the meeting had been held to discuss "ordinary union business." To add the proper fillip of mystery to the gathering it was intimated that a like explanation would be given for any subsequent conferences which might be staged during Mr. Lewis' sojourn in the City of Brotherly Love.

The fact that Van A. Bittner, chief organizer in West Virginia, and George W. Lewis, who has been watching developments in Nova Scotia, joined International Vice-President Murray and International Secretary-Treasurer Kennedy at the meeting led some observers to believe that the union leaders were mapping out a campaign for a general strike in the soft coal regions. Such a strike was hinted at by Mr. Lewis when he addressed the tri-district convention of anthracite miners several weeks ago. The hint was repeated in more threatening language later by Mr. Bittner in telegrams to Secretaries Davis and Hoover, without sweeping the Washington administration off its feet.

That the breakdown of the Jacksonville agreement in many parts of the bituminous fields is worrying union leaders is well known. The Van Bittner telegrams were an open appeal to the government to help the union whip back into line districts that had thrown off the union yoke. In some quarters it is believed that the Bourbonism shown by the union in the Atlantic City conferences with the anthracite operators was due to the bituminous situation and was part of a strategical movement to scare the government into intervening in the anthracite dispute and then to demand that it back up the United Mine Workers in the union's bituminous campaign as the price of labor's consent to intervention in anthracite.

The breach between anthracite op-

Frick Company Fires 265 Coke Ovens

The H. C. Frick Co. last week fired 265 coke ovens in the Connellsville (Pa.) region, of which 150 are at Hecla, 50 at Phillips and 65 at Leith. They were put in blast Tuesday morning. The putting in blast of an additional furnace at Lorain, Ohio, early in the week caused the demand for coke.

The general increase in the demand for iron, it is said, will cause more furnaces to go into blast soon and in this event the firing of more coke ovens will follow. While no official information has been forthcoming, it was said yesterday that in all probability several hundred additional ovens will be fired this or next week.

erators and union leaders seems as wide as ever. Neither side has announced any step toward ending the deadlock created by Mr. Lewis' refusal to discuss union demands further with the Inglis committee unless assured in advance of favorable consideration. The national administration preserves its attitude of silence and the expected invitation to journey to Harrisburg has not yet arrived. Governor Fuller of Massachusetts, however, has asked his fellow New England executives to meet with him at Boston on Aug. 21. "to take definite action on the fuel situation with the object of relieving New England from its dependency on anthracite as a fuel."

Within a few weeks there will be a department of the Safety Division of the U. S. Bureau of Mines to deal with electrical hazards. This will be a field service in which attention will be given to the reduction of electrical hazards, such as defective wiring and faulty installations. Limited at the outset to what is known as District G, which comprises New Mexico, Colorado and Wyoming, the work will be in charge of K. H. Marshall.

Britons Muddle Along in Their Coal Tangle

The principal advance made during the past week in the British coal situation was that a great deal of oratory was released in Parliament during the debates about the government subvention and the formation of the Royal Commission of Inquiry which is to study all phases of England's coal problem during the winter. The Commission is not yet named. A. J. Cook and Tom Smith, miner leaders, want the miners' federation officially represented, but Prime Minister Baldwin will not agree. Mr. Cook has announced that the Reds are threatening him and that the government ought to protect labor leaders against insidious attacks.

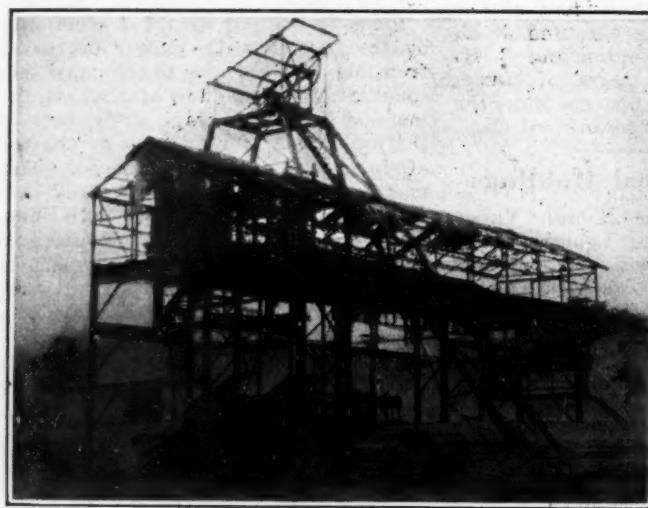
The subvention to wages of coal miners during the next nine months pending an inquiry by a Royal Commission involves the maintenance of the 87 to 13 ratio, which means wages will receive 87 per cent of the proceeds of the industry after deduction of costs other than wages. Wherever this percentage provides a sum below the 1924 minimum wages agreement, the difference will be met by a subvention to coal districts rather than to individual mines as units. Owners are guaranteed 13 per cent of the proceeds of the industry up to 15d. profit per ton, beyond which profits go to meet subvention.

Alaska Coal Deposits Prove Unexpectedly Valuable

Development of Alaska coal mines is revealing that the deposits there are much more valuable than early prospecting indicated, according to O. P. Hood, of the Bureau of Mines, who visited the northern territory recently.

Large dredging operations which are to begin next season will provide a new outlet for Alaska coal. The dredges are to be operated electrically from a central station, which will burn coal.

Development work at the several operating properties, Mr. Hood found, has uncovered high-grade coal which has not been seriously disturbed by faulting.



Pittsburgh Coal Co. Scraps Idle Plants

The Pittsburgh Coal Co. is proceeding with undiminished vigor in the work of dismantling a number of plants at its less efficient and higher cost operations. The pictures show two of the tipples that are being scrapped. At the left is depicted the tippie in course of destruction at Laurel Mine No. 2, and at the right the demolition of the tippie at Beadling, Pa.

Union Makes No Progress in Strike Zone of West Virginia—Open-Shop Tonnage Grows—One Man Beaten Up

The cause of unionism in northern West Virginia was aided by nothing that happened during the past week in that region, where mine owners and coal miners who wanted to work combined to throw the union out months ago. The tattered remaining forces of unionism, still going through the motions of a strike, are making little impression and the proportion of non-union coal mined continues to mount over the total produced at union mines. The week saw a little roughness, a great many rumors, and a near-schism within the ranks of the West Virginia Federation of Labor, dominated by coal unions.

The Federation held an election Aug. 12. C. Frank Keeney, once president of District 17, ran for the presidency of the Federation and, after getting himself nominated, withdrew from the convention with 87 delegates from Mine Workers' locals, declaring he would try to split the Federation unless the administration of it "gave the members a square deal." Finally he was mollified and returned to the convention, withdrawing his candidacy. John W. Eaton was re-elected president. Keeney has been charged with attempting to start a West Virginia miners' union independent of Indianapolis, so that a deal could be made with mine owners for operating mines at a reduced wage. The demonstration in the Federation convention indicates something of his strength within labor ranks in his state.

Deputy Sheriff Beaten

The nearest thing to rioting in the strike district took place at Laura Lee, one of the Hutchinson Coal Co. towns, Aug. 9, when a group of striking miners beat up J. E. Bacorn, a deputy sheriff, who was suspected of being a "hired gunman" employed by the Hutchinson Coal Co. He was in a strikers' meeting and was ordered to leave. He refused and the fight followed. Van Bittner, International Representative in the strike zone, took occasion to speak about the incident, declaring that since "the high-handed Sheriff Don Chafin" of Logan County had been sentenced to serve a term in the penitentiary Chafin tactics on the part of sheriffs had been transferred to other counties.

Mr. Bittner, C. Fremont Davis, financial agent, and James McCleary, international representative, were in conference with John H. Jones of Pittsburgh, Pa., president of the Bertha Consumers Co. during the end of last week. Effort is being made to have the company resume operation at Rachel mine at Downs on a union basis. The union claims that the company has evicted some and expects to evict more union miners' families within a short time.

In the first four days of last week the non-union mines of the striking region produced 6,397 cars of coal, against 1,021 cars loaded by union mines. The peak daily non-union pro-

duction in northern west Virginia was reached Aug. 13, when 1,679 cars were produced in the 12½ counties, exceeding the previous daily peak of Aug. 7, when 1,622 cars were loaded. On the average there were 178 mines at work on a non-union basis in that period last week, compared to 13 union mines. The largest number of non-union mines to work any one day since April 1, was on Aug. 13, when 180 were reported active.

During last week several new production records were reached on the various divisions. On Aug. 13 a new daily non-union record was attained on the Monongahela Ry. and a third on the Charleston Division, B. & O. R.R., at 101 cars. The B. & O. Cumberland Division, mines loaded 155 cars on Aug. 12, which was also a new record.

Picketing in the region has eased up, although it breaks out in spots spasmodically. The United Mine Workers held mass meetings Aug. 16 at Jere mine in Scott's Run, Gypsy and Kingmont, points where non-union mines thrive.

The union broke into a lively advertising drive in a Fairmont newspaper last week when it attacked the American plan. They charged that non-union coal companies refused to let farmers sell produce and vegetables in the open shop mining towns. Operators say that it is propaganda. Others admit farmers are interviewed as they come in because it is necessary to have a line on who enters company property.

The strike zone of the Northern Panhandle section is quiet. According to reports, the United Mine Workers of America have invited William Green, president of the American Federation of Labor, to address a mass meeting in the latter part of September.

At a recent miners' mass meeting held at Warwood, near Wheeling, announcement was made that 200 miners employed by the Richland Coal Co. and Costantza Coal Co., both of which withdrew from the United Mine Workers of America, have asked to be reinstated. The Richland mine is in the hands of a receiver, but the Costantza mine is active.

Two More Pomeroy Tipplers Burned; \$150,000 Loss

The tipple of Stalter Essex Mine No. 1, on Thomas Fork, and that of the Blackstone Coal Co., at Rutland, two of the largest in the Pomeroy (Ohio) field, were burned at about 3 a.m. Aug. 8, causing a loss of \$150,000. They were found to be afire within ten minutes of each other.

Four coal mining plants so far have been destroyed since the beginning of the labor difficulties following the resumption of the mines in the Pomeroy field on the 1917 wage scale.

The Rutland property was formerly owned and operated by the Maynard Coal Co., of Columbus, but was sold a few months ago at a receiver's sale to a company of eighty miners, who have

Hoover in Coal Merger? No!

Talk of the proposed gigantic merger of West Virginia, eastern Kentucky and Tennessee non-union mines continues to absorb the attention of a great many coal men the country over. One story had it that Herbert Hoover, Secretary of Commerce, had been approached with the suggestion that he head the \$500,000,000 corporation-to-be and that he had "listened with interest." Mr. Hoover, in his office in Washington, said this week that he knew nothing about the reported large merger and has no thought of associating himself with any such enterprise. Another story to the effect that the Pittsburgh Coal Co. was to be one of those merged merely drew a flat denial from that concern. Questionnaires to mine owners are circulating throughout southern West Virginia, eastern Kentucky and Tennessee.

been operating it at full capacity on a co-operative plan.

Those first to see the fire insist it was of incendiary origin. The flooring of the runway had been saturated with some inflammable fluid, which caused the blaze to mount the structure with leaps and bounds, they declared.

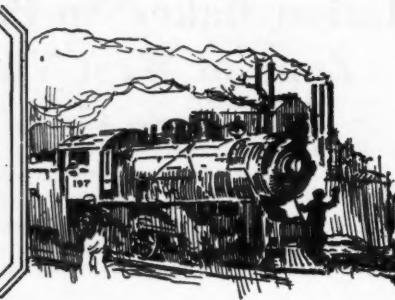
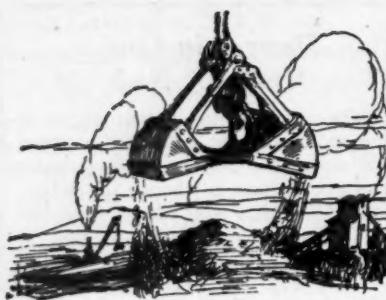
The Stalter Essex mine, which had not been in operation for more than a year, is owned by the same company which is operating mine No. 7 near by on the 1917 scale. Mine No. 7 is well scattered and has a strong force of guards, and it would seem impossible for an incendiary to get to it.

At mine No. 1 a half-burned torch consisting of a bunch of cotton waste attached to a long stick by a piece of twine was found. The waste had been saturated with oil.

Steps were taken at once by both companies to rebuild the two tipplers. It is announced that both concerns will be running mine-run coal within two weeks and that shaker screens, picking tables and loading booms will be installed later.

The two fires constituted a climax to a series of mine fires and explosions in the Pomeroy mining field which has extended over a period of several months. Other acts of violence were the burning of the tipple at Stalter-Essex mine No. 5, dynamiting of a ferryboat across the Ohio River used by miners and the destruction of a power house at a mine of the Pittsburgh Coal Co. Rewards aggregating \$1,800 have been offered for the arrest and conviction of the culprits.

The Fourth International First-Aid and Mine-Rescue Meet, to be held Sept. 10-12, at Springfield, Ill., will be financed by the miners, the entire sum, about \$4,000, having been underwritten by a district mine union official. A. D. Lewis, a brother of John L. Lewis, has been named chairman of the committee on arrangements, succeeding the late Martin Bolt, who was the chief of the Department of Mines of Illinois.



Production And the Market

Soft Coal Shows Gradual Improvement; Anthracite Moves Rapidly

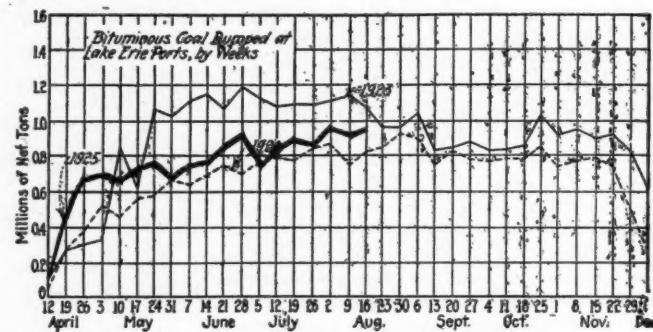
Gradual improvement in demand for bituminous coal, reflected in the moderate, but steady rise in the rate of production which began late in June, and a modest appreciation in price levels characterizes the present position of the soft coal markets of the country. The betterment in demand is more strongly felt in the sale of prepared sizes than in the movement of steam coal. Although the threatened suspension in the hard coal regions must be given credit for some part in the changes of recent weeks, the bigger influence has been the seasonal increase in domestic demand.

These are the days when the country retailer begins to buy more freely because his farmer customers enter the market. If further proof of this is wanted, it is necessary only to point to the fact that the most optimistic reports on the domestic outlook come from the Middle West, the South and the Southwest. The Middle Atlantic and New England states, the territory of heaviest anthracite consumption, still find improvement in the domestic bituminous market a hope rather than a reality.

The improvement in domestic demand, however, has not been without its drawbacks. It has eliminated the necessity of crushing mine-run in the Illinois fields, but it has also brought such a production of fine coal both there and in adjacent fields that prices on screenings have slid off. Eastern Kentucky, it is true, has been an exception in this decline, but other parts of that state and Indiana have not fared as well. From Ohio, West Virginia and western Pennsylvania, however, come reports of a stronger undercurrent in steam coal prices generally and a similar feeling of optimism pervades most Atlantic seaboard markets.

As might be expected, anthracite demand maintains a keen edge. The major producers are in a position

where they can close the doors to business tendered by new customers. Some of the independents also have turned a deaf ear to orders and decline to quote on future shipments. There are others, however, who have reverted to auction-block salesmanship—but not with a great measure of success. At the close of last week there was considerable independent tonnage afloat

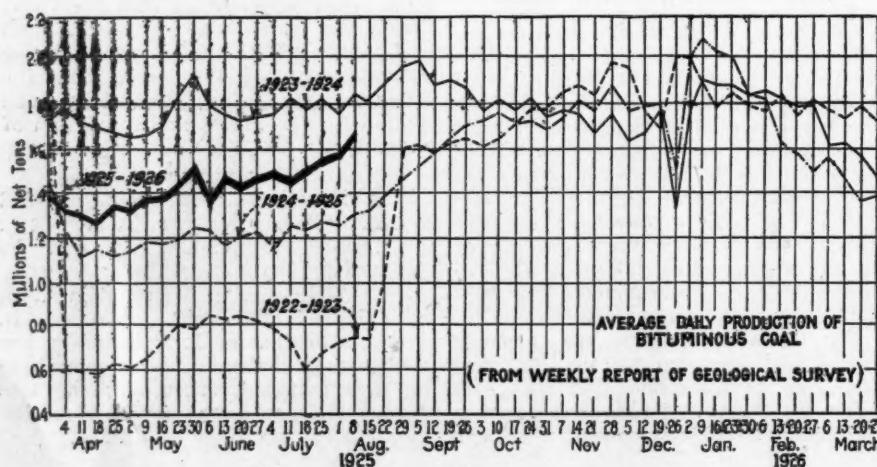


in New York Harbor awaiting buyers willing to pay 40 to 50c. above average maximum line quotations.

Bituminous coal output for the week ended Aug. 1 is estimated at 9,957,990 net tons, as compared with 9,456,000 tons the week preceding. Anthracite output declined from 2,087,000 to 2,068,000 net tons.

Coal Age Index of spot prices of bituminous coal last week advanced one point to 167, the corresponding price being \$2.02.

Dumpings at Lake Erie ports during the week ended Aug. 16 were: Cargo, 894,526 net tons; steamship fuel, 54,526 tons—a total of 949,052 tons, compared with 941,989 tons the week preceding. Hampton Roads dumpings in the week ended Aug. 13 totaled 438,456 net tons, compared with 461,259 tons the preceding week.



Estimates of Production

	(Net Tons)	BITUMINOUS	1924	1925
July 25 (a).....	7,785,000	9,343,000		
August 1 (a).....	7,723,000	9,456,000		
August 8 (b).....	8,036,000	9,957,000		
Daily average.....	1,339,000	1,659,000		
Cal. yr. to date.....(c)	274,615,000	285,493,000		
Daily average.....	1,473,000	1,523,000		

Daily av. to date...	1,477,000	1,555,000
ANTHRACITE		
July 25.....	1,837,000	2,049,000
August 1.....	1,720,000	2,087,000
August 8.....	1,664,000	2,068,000
Cal. yr. to date.... (c)	55,373,000	55,992,000

BEEHIVE COKE

August 1 (a).....	95,000	122,000
August 8 (b).....	89,000	124,000
Cal. yr. to date.... (c)	6,591,000	5,978,000

(a) Revised since last report. (b) Subject to revision. (c) Minus two days' production to equalize

Midwest Outlook Brightens

In the Midwest business is quite satisfactory in the coarser sizes of domestic coal from Indiana and Illinois. The mines best situated in Indiana are those producing Fourth Vein coal and one or two that produce freak Fifth Vein coal. In Illinois the leaders are the Franklin County operators and some in Saline County. Orders have been coming in in such a satisfactory manner for 6-in. lump that many producers have temporarily stopped soliciting business for it. The demand for 6x3-in. egg and for 3x2-in. egg is fair, but the smaller domestic nut sizes are not moving forward in great volume. Depending on developments in the East, further price changes may be put in effect soon, although most producers are evasive on this point, preferring the policy of watchful waiting for the time being.

Steam coals hit a temporary sag, screenings slipping about 10c. in practically all of the producing fields. This was brought about by increased tonnage from the retailer and by the fact that the big industrials in Chicago are buying on the open market only for current needs. It is expected that the steam sizes will come in for a slow and gradual advance as Sept. 1 approaches. This prediction is based on the fact that there is little industrial coal in storage in Chicago. Many Illinois and Indiana mines that have been closed since early last spring are reopening.

Eastern coals, especially smokeless, are extremely active. A number of producers have withdrawn their \$3.25 circular to the retail trade (\$3 to the wholesalers), refusing to book any more business until they clean up some of their current obligations.

Anthracite coal is in very strong demand. Some of the big hard coal companies with sales offices in Chicago have instructed their offices to withdraw all prices on certain sizes and to take on very little business on the other sizes available for shipment.

The tone of the Chicago market on the whole is very satisfactory, with more improvement in sight.

In the Williamson and Franklin County fields there is much activity. The crushing of mine-run has practically stopped because domestic business has picked up enough to enable a sufficient tonnage of screenings to come through to take care of contracts. Some mines that belong to big companies are working five days a week but the average working time is two to three. There has been a good demand for lump and egg up until this week when lump has dropped off but it is pretty well sold up ahead. Domestic is moving in spurts and shows that the market is not steady. Railroad tonnage is unusually good. Strip mines are practically working full time. Prices are not steady.

In the Duquoin field working time is from three to four days a week at the mines that are working and strip mines are working full time. There are no changes in prices.

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market	Aug. 18 Quoted	Aug. 3 1924	Aug. 10 1925	Aug. 17 1925†	Midwest	Market	Aug. 18 Quoted	Aug. 3 1924	Aug. 10 1925	Aug. 17 1925†
Smokeless lump.....	Columbus...	\$3.60	\$2.85	\$2.85	\$3.00@ \$3.50	Franklin, Ill. lump.....	Chicago....	\$2.85	\$2.85	\$2.85	\$2.75@ \$3.00
Smokeless mine run.....	Columbus...	2.00	1.85	1.85	1.80@ 2.00	Franklin, Ill. mine run.....	Chicago....	2.35	2.35	2.35	2.25@ 2.50
Smokeless screenings.....	Columbus...	1.20	1.35	1.35	1.25@ 1.50	Franklin, Ill. screenings.....	Chicago....	1.85	2.00	2.00	1.65@ 2.25
Smokeless lump.....	Chicago...	3.85	3.25	3.25	3.25	Central Ill. lump.....	Chicago....	2.60	2.60	2.60	2.50@ 2.75
Smokeless mine run.....	Chicago...	1.85	2.00	2.00	1.90@ 2.10	Central Ill. mine run.....	Chicago....	2.10	2.10	2.10	2.00@ 2.25
Smokeless lump.....	Cincinnati...	3.85	3.00	3.10	3.50@ 4.00	Central Ill. screenings.....	Chicago....	1.60	1.70	1.70	1.35@ 1.75
Smokeless mine run.....	Cincinnati...	1.85	2.00	2.05	2.50	Ind. 4th Vein lump.....	Chicago....	2.75	2.85	2.85	2.75@ 3.00
Smokeless screenings.....	Cincinnati...	1.35	1.30	1.40	1.50	Ind. 4th Vein mine run.....	Chicago....	2.35	2.35	2.35	2.25@ 2.50
*Smokeless mine run.....	Boston...	4.15	4.40	4.30	4.25@ 4.35	Ind. 4th Vein screenings.....	Chicago....	1.80	1.80	1.80	1.50@ 1.75
Clearfield mine run.....	Boston...	1.85	1.75	1.75	1.65@ 1.90	Ind. 5th Vein lump.....	Chicago....	2.50	2.35	2.35	2.25@ 2.50
Cambrria mine run.....	Boston...	2.45	1.95	1.95	1.85@ 2.10	Ind. 5th Vein mine run.....	Chicago....	2.10	1.95	1.95	1.85@ 2.10
Somerset mine run.....	Boston...	2.10	1.85	1.85	1.75@ 2.00	Ind. 5th Vein screenings.....	Chicago....	1.50	1.50	1.50	1.30@ 1.60
Pool 1 (Navy Standard).....	New York...	2.30	2.55	2.55	2.35@ 2.75	Mt. Olive lump.....	St. Louis...	2.85	2.50	2.50	2.50
Pool 1 (Navy Standard).....	Philadelphia...	2.80	2.60	2.60	2.45@ 2.75	Mt. Olive mine run.....	St. Louis...	2.50	2.25	2.25	2.00
Pool 1 (Navy Standard).....	Baltimore...	1.85	1.85	1.80	1.95	Mt. Olive screenings.....	St. Louis...	2.00	1.75	1.75	1.75
Pool 9 (Super. Low Vol.).....	New York...	2.05	1.95	1.95	1.80@ 2.10	Standard lump.....	St. Louis...	2.15	2.25	2.25	2.25
Pool 9 (Super. Low Vol.).....	Philadelphia...	2.15	2.00	2.00	1.85@ 2.20	Standard mine run.....	St. Louis...	1.80	1.80	1.80	1.75@ 1.90
Pool 9 (Super. Low Vol.).....	Baltimore...	1.95	1.75	1.75	1.65@ 1.85	Standard screenings.....	St. Louis...	1.20	1.25	1.30	1.25@ 1.40
Pool 10 (H.G. Low Vol.).....	New York...	1.85	1.75	1.75	1.65@ 1.90	West Ky. block†.....	Louisville...	2.20	1.80	1.80	1.75@ 2.00
Pool 10 (H.G. Low Vol.).....	Philadelphia...	1.75	1.70	1.70	1.60@ 1.85	West Ky. mine run.....	Louisville...	1.60	1.15	1.15	1.10@ 1.50
Pool 10 (H.G. Low Vol.).....	Baltimore...	1.70	1.60	1.60	1.55@ 1.65	West Ky. screenings.....	Louisville...	1.20	.90	.85	.70@ .85
Pool 11 (Low Vol.).....	New York...	1.60	1.60	1.60	1.50@ 1.70	West Ky. block†.....	Chicago....	2.30	1.90	2.00	1.75@ 2.25
Pool 11 (Low Vol.).....	Philadelphia...	1.45	1.55	1.55	1.50@ 1.60	West Ky. mine run.....	Chicago....	1.55	1.35	1.35	1.15@ 1.60
Pool 11 (Low Vol.).....	Baltimore...	1.55	1.40	1.40	1.35@ 1.45						

High-Volatile, Eastern

Pool 54-64 (Gas and St.)...	New York...	1.50	1.60	1.55	1.45@ 1.70	Big Seam lump.....	Birmingham...	3.40	2.00	2.00	1.75@ 2.25
Pool 54-64 (Gas and St.)...	Philadelphia...	1.50	1.50	1.50	1.45@ 1.60	Big Seam mine run.....	Birmingham...	1.75	1.75	1.75	1.50@ 2.00
Pool 54-64 (Gas and St.)...	Baltimore...	1.45	1.35	1.35	1.30@ 1.45	Big Seam (washed).....	Birmingham...	2.00	1.85	1.85	1.75@ 2.00
Pittsburgh so'd gas.....	Pittsburgh...	2.40	2.40	2.40	2.40@ 2.50	S. E. Ky. block†.....	Chicago....	2.50	2.55	2.55	2.40@ 2.75
Pittsburgh gas mine run.....	Pittsburgh...	2.10	2.15	2.15	2.10@ 2.25	S. E. Ky. mine run.....	Chicago....	1.60	1.70	1.70	1.60@ 1.85
Pittsburgh mine run (St.).....	Pittsburgh...	1.85	1.95	1.95	1.90@ 2.00	S. E. Ky. block†.....	Louisville...	2.10	2.25	2.50	2.65@ 3.00
Pittsburgh slack (Gas).....	Pittsburgh...	1.30	1.50	1.50	1.40@ 1.60	S. E. Ky. mine run.....	Louisville...	1.50	1.55	1.55	1.35@ 1.75
Kanawha lump.....	Columbus...	2.10	2.00	2.00	1.90@ 2.15	S. E. Ky. screenings.....	Louisville...	.95	1.10	1.15	1.10@ 1.25
Kanawha mine run.....	Columbus...	1.40	1.40	1.40	1.35@ 1.50	S. E. Ky. block†.....	Cincinnati...	2.35	2.35	2.55	2.40@ 2.75
Kanawha screenings.....	Columbus...	1.05	1.15	1.15	1.25@ 1.35	S. E. Ky. mine run.....	Cincinnati...	1.55	1.45	1.50	1.40@ 1.75
W. Va. lump.....	Cincinnati...	2.25	2.35	2.35	2.25@ 2.50	S. E. Ky. screenings.....	Cincinnati...	1.00	1.20	1.30	1.10@ 1.25
W. Va. gas mine run.....	Cincinnati...	1.55	1.45	1.55	1.50@ 1.65	Kansas lump.....	Kansas City...	4.50	4.25	4.10	4.25
W. Va. steam mine run.....	Cincinnati...	1.40	1.30	1.45	1.40@ 1.50	Kansas mine run.....	Kansas City...	3.50	3.10	3.10	3.00@ 3.25
W. Va. screenings.....	Cincinnati...	.90	1.15	1.30	1.10@ 1.25	Kansas screenings.....	Kansas City...	2.50	2.50	2.50	2.50
Hocking lump.....	Columbus...	2.45	2.15	2.15	2.25@ 2.50						
Hocking mine run.....	Columbus...	1.55	1.55	1.55	1.45@ 1.70						
Hocking screenings.....	Columbus...	1.05	1.35	1.35	1.35@ 1.50						
Pitts. No. 8 lump.....	Cleveland...	2.40	2.25	2.25	1.95@ 2.50						
Pitts. No. 8 mine run.....	Cleveland...	1.85	1.90	1.85	1.80@ 1.90						
Pitts. No. 8 screenings.....	Cleveland...	1.30	1.45	1.40	1.35@ 1.45						

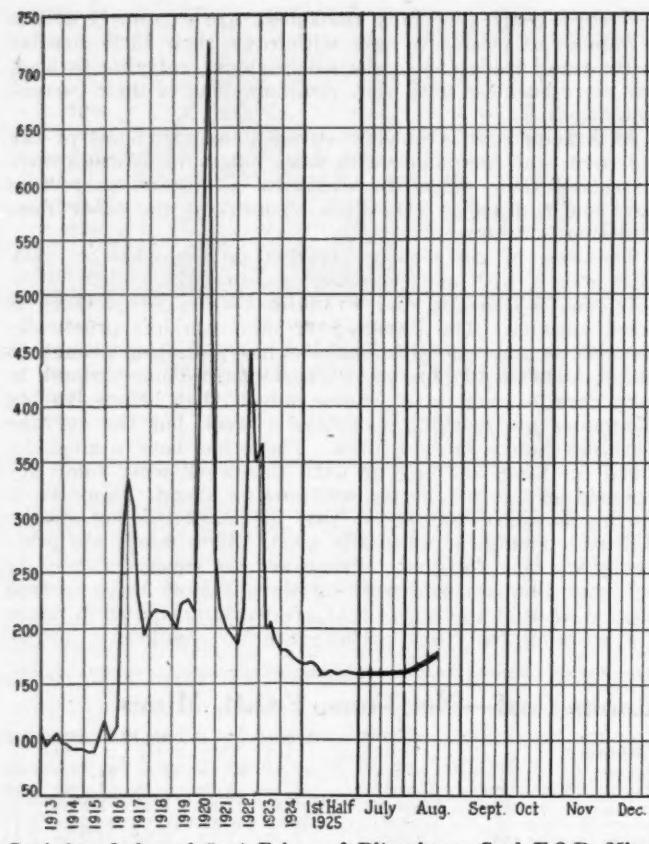
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in heavy type; declines in italics.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market	Freight Quoted	August 18, 1924	Independent	Company	August 10, 1925	Independent	Company	August 17, 1925†	Independent	Company
Broken.....	New York...	\$2.34		\$8.00@ \$9.10		\$8.20@ \$8.90		\$8.20@ \$8.90		\$8.25@ \$8.90	
Broken.....	Philadelphia...	2.39		8.90@ 9.05		8.25@ 8.90		8.65@ 8.90		8.65@ 8.90	
Egg.....	New York...	2.34	\$8.35@ \$8.75	8.65@ 9.10	\$9.25@ \$9.50	8.65@ 8.90	\$9.50@ \$10.00	8.65@ 8.90	8.65@ 8.90	8.65@ 8.90	
Egg.....	Philadelphia...	2.39	9.00@ 9.70	9.00@ 9.05	8.90@ 9.70	8.70@ 8.85	8.90@ 9.70	8.70@ 8.85	8.70@ 8.85	8.70@ 8.85	
Egg.....	Chicago*	5.06	8.09@ 8.20	8.03@ 8.10	8.17@ 8.60	8.03@ 8.28	8.17@ 8.60	8.03@ 8.28	8.03@ 8.28	8.03@ 8.28	
Stove.....	New York...	2.34	9.25@ 9.60	8.65@ 9.45	9.75@ 10.50	9.15@ 9.40	10.00@ 10.60	9.15@ 9.40	9.15@ 9.40	9.15@ 9.40	
Stove.....	Philadelphia...	2.39	9.35@ 10.00	9.05@ 9.10	9.15@ 10.75	9.15@ 9.30	9.15@ 10.75	9.15@ 9.30	9.15@ 9.30	9.15@ 9.30	
Stove.....	Chicago*	5.06	8.40@ 8.50	8.43@ 8.53	8.71@ 8.90	8.40@ 8.80	8.71@ 8.90	8.40@ 8.80	8.71@ 8.90	8.48@ 8.80	
Chestnut.....	New York...	2.34	8.25@ 8.75	8.65@ 9.15	9.25@ 9.50	8.65@ 8.90	9.50@ 10.00	8.65@ 8.90	9.50@ 10.00	8.65@ 8.90	
Chestnut.....	Philadelphia...	2.39	8.85@ 9.80	9.00@ 9.05	9.15@ 10.15	8.85@ 8.90	9.15@ 10.15	8.85@ 8.90	9.15@ 10.15	8.85@ 8.90	
Chestnut.....	Chicago*	5.06	8.18@ 8.33	8.28@ 8.45	8.24@ 8.45	8.10@ 8.28	8.35@ 8.60	8.24@ 8.45	8.35@ 8.60	8.28@ 8.50	
Pea.....	New York...	2.22	4.25@ 5.25	5.75@ 6.00	5.00@ 6.00	5.00@ 5.55	5.00@ 6.00	5.00@ 5.55	5.00@ 6.00	5.00@ 5.55	
Pea.....	Philadelphia...	2.14	5.75@ 6.25	5.75@ 6.00	5.50@ 5.90	5.00@ 5.50	5.50@ 5.90	5.00@ 5.50	5.50@ 5.90	5.00@ 5.50	
Pea.....	Chicago*	4.79	5.23@ 5.55	5.36@ 5.91	4.91@ 5.36	4.91@ 5.36	5.18@ 5.36	4.91@ 5.36	5.18@ 5.36	5.05@ 5.36	
Buckwheat No. 1.....	New York...	2.22	2.00@ 2.25	3.00@ 3.15	2.15@ 2.50	2.15@ 2.50	2.25@ 2.60	2.25@ 2.60	2.25@ 2.60	2.25@ 2.60	
Buckwheat No. 1.....	Philadelphia...	2.14	2.50@ 3.00	3.00	2.50@ 2.75	2.50	2.50	2.50	2.50	2.50	
Rice.....	New York...	2.22	1.70@ 2.00	2.00@ 2.25	2.00@ 2.25	2.00@ 2.25					



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

Index	1925				1924
	Aug. 17	Aug. 10	Aug. 3	Aug. 18	
Weighted average price.....	167	166	163	165	
	\$2.02	\$2.01	\$1.97	\$2.00	

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

A little activity is beginning in the Mt. Olive district. In the Standard field, it is hard to make any statement that covers the field. Some mines run long and lose money. Others run only a day or two a week and get above cost for their coal. Railroad tonnage is fairly good and the feeling is general that Sept. 1 will see business good in this field.

Domestic movement in St. Louis is fairly good on the better grades of coal for storage. Apartment houses are ordering in some Standard and school coal is being put in. Demand for other fuels such as anthracite, smokeless and coke is not good. Southern Illinois high grade is in fairly good favor. Eastern coals are strong in the Illinois territory and weak west of the river. Arkansas is finding good movement into the western part of Missouri.

Prices Rise with Brisk Trade in Kentucky

Coal prices in Kentucky are steadily advancing on prepared sizes, which are in demand. Screenings from the eastern Kentucky field are very firm, and though quoted at as low as \$1.10 in a small way, not much quality stock is to be had under \$1.25. Mine-run continues strong at \$1.35@\$1.75. Prepared starts at \$1.75@\$2 for small nut, \$2.10@\$2.35 for egg and small lump and go to \$2.65@\$3 on 4-in. block, which could be had two weeks ago at \$2.

Higher prices prevail also in western Kentucky, where 6-in. block is \$1.75@\$2; lump and egg, \$1.60@\$1.85; nut, \$1.35@\$1.65; screenings, '70@\$85c., and mine-run, \$1.10@\$1.50. Screenings, which are in much larger production, are harder to dispose of, as the field has never had a really good market for surplus production in periods of activity.

Buyers are being scared into the market by strike talk in the East. Retailers are buying freely and industrial, utility, railroad and other concerns are stocking. Eastern Kentucky operators have plenty of business in hand with a strong indication of higher markets and better prices.

Retailers have advanced prices 50c. a ton all along the line, notifying good customers in advance and booking a considerable amount of future business.

The market on prepared is 50c. a ton higher than thirty days ago, and without loss on the screenings side of the account for eastern Kentucky.

Milwaukee's coal trade is more lively. Both anthracite and bituminous coal are moving out quite freely. Total receipts by cargo for the season up to Aug. 13 aggregate 1,850,067 tons—426,534 tons of anthracite and 1,423,533 tons of bituminous coal. These receipts are greater than last year by 3,896 tons of anthracite, 326,772 tons of bituminous coal, and 330,668 in the total tonnage. During July, Milwaukee received 4,934 tons of anthracite and 32,634 tons of bituminous coal by all rail routes.

Northwest Sees Gradual Pickup

Retail trade at Duluth and Superior and in some of the larger towns over the Northwest shows signs of picking up, but general movement off the docks is still light. A sharp spurt is expected, however, around the beginning of next month. An improvement has taken place in industrial buying, but individual orders have been small. Better shipments of steam coal to iron mining companies on the Minnesota ranges also are reported. Utilities have been inquiring for substantial tonnages lately, due to a shortage of water.

Thirty-seven cargoes of coal, including only one of anthracite, were unloaded at the docks last week, and sixteen cargoes, all bituminous, were reported en route. During July 1,362,574 tons of bituminous and 139,292 tons of anthracite was unloaded at the docks. For the season to Aug. 1 anthracite receipts totaled 676,609 tons and bituminous receipts, 4,234,111 tons. This is an increase over last year for the same period of 87,459 tons of anthracite and 1,410,138 tons of bituminous.

Shipments from the docks during July were 14,693 cars, of which 6,806 cars were from Duluth and 7,887 from Superior, compared with 11,955 cars during June and with 15,301 cars during July last year. Larger cars were used by the railroads this year, there being few ore cars in commission.

As stocks on the docks Aug. 1 were 675,000 tons of anthracite and 4,350,000 tons of bituminous, retailers and consumers are not worrying over the possibility of an anthracite strike. Then too the use of Pocahontas and other smokeless coals as substitutes is gaining.

Prices of both anthracite and bituminous coals are firm and unchanged. Pocahontas prepared sizes are in demand at \$7.50 on dock.

Trade Picks Up in Southwest

The market is improving throughout the Southwest. Dealers are buying and some consumers are beginning to fill their bins. Operators who did not raise their quotation on Kansas shaft lump to \$4.25 on Aug. 1, followed the lead of their competitors on Aug. 15. Kansas shovel lump is now \$3.75; shovel nut, \$3.50; shovel mine-run, \$3, and shovel screenings, \$2.50. More mines are expected to be opened in Kansas early in September. McAlester, Okla., has a steady production under the 1917 scale and Henryetta, Okla. also is producing some coal, but under difficulties due to the picketing of mines by miners opposing their operation under less than the 1924 scale. Work in Arkansas gradually is getting under way, part of it under the 1917 scale. Many operators in the Arkansas field are holding back until they see what results attend the efforts of the pioneers to effect a lower scale throughout the state.

In Colorado an increase is noticeable in the demand for domestic coal, and a further substantial increase is expected. There have been no changes in prices during the past week.

The market for Utah's coal mines is slowly improving, but the situation is far from satisfactory. Storage orders are 50 per cent below normal, and normal has been none too good for the past few years. Dealers fear they will be swamped following the first cold storm of fall. Operators report a shortage of closed cars, but they are able to get other equipment in sufficient volume to carry on. Working time is around two and one-half days a week, taking the state as a whole.

One of the largest producers in Utah reports California as the best market for coal at this time. This market is

taking 8-in. lump and stove coal, it was stated. The price situation is unchanged, except that there is not so much probability of an increase as there was. Dealers have been making the most of the price raise rumors to get winter storage business, but operators say little about it now.

Smokeless Strong at Cincinnati

At Cincinnati the long expected rush of buying orders for smokeless coal finally came and within a week there was an advance of \$1 a ton on domestic sizes. Now \$3.50@\$3.75 generally is asked, with some selling agencies in Cincinnati asking \$4 for prompt shipment. True this "top" is not an actual price, being intended to curb a mad rush, but three of the biggest companies are asking it. Smokeless nut is \$2.50@\$2.75; mine-run, \$2.25@\$2.50, and what free screenings there are command \$1.50.

Domestic business generally has moved up, some of the buying being due to strike talk in the East but most of it has been to fill the 25 per cent shortage in the yards and householders' bins. Southeastern Kentucky has moved up the price all along the line with Hazard quoting \$2.40@\$2.50; Harlan, \$2.50@\$2.60 and Elkhorn, \$2.75 for block. Egg, 2-in. and mine-run are practically in the same position as last week, screenings having a wider spread of \$1.10@\$1.25, due to the increase in orders for domestic.

Generally speaking West Virginia high-volatile coals have not shared so well in the upturn, 4-in. block being quoted at \$2.25@\$2.50, with no perceptible change in the other sizes.

There has been no diminution in production, 14,030 loaded cars having passed last week from West Virginia and eastern Kentucky through the Cincinnati district of the American Railway Association. This is the second largest interchange in history. Of these, 3,292 were en route to the lakes.

River business still holds up with around 25,000 tons moved through the Cincinnati harbor this week. Retail figures are unchanged but some dealers are preparing to move up the price.

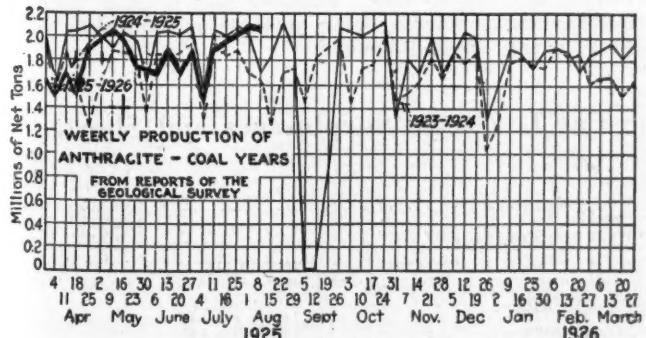
Domestic demand has shown quite an increase in Columbus and central Ohio during the past week. Retailers are hurrying into the market for stocks as householders are placing orders in larger number. The shortage applies to all grades, including smokeless varieties, splints and Ohio mined coals. Retail prices are stronger with smokeless selling at \$8@\$8.50; splints, \$7.25@\$7.75 and Hocking and Pomeroy grades at \$6@\$6.75 delivered.

Mines are being placed in operation in the Hocking Valley field and a generally better tone has developed in domestic circles. While production has not increased as yet to any extent still steps have been taken to almost double the output in certain places in the Crooksville and Nelsonville fields.

Little change has taken place in the steam business outside of an advance of from 5c. to 15c. on screenings, not only from Ohio but from West Virginia. Other steam grades are holding rather steady and the volume of business has not increased materially. Most of the railroads are shopping around for low prices and the same is true of public utilities and large manufacturing concerns.

Production in the southern Ohio field is increasing under the influence of a better domestic demand. The output is about 30 per cent of capacity and will undoubtedly be increased soon.

At Cleveland market conditions and spot prices remained practically unchanged from the week before except that steam inquiries grew a bit heavier. Production in eastern Ohio during the week ending Aug. 8 totaled 247,000 tons



which represents 35 per cent of capacity. This was 18,000 tons more than was shipped the week previous.

Pittsburgh Has Slight Upturn

At Pittsburgh demand is somewhat larger, movement a little heavier and coal is much easier to sell. Movement of domestic coal has begun in a moderate way. Operation has increased to about 20 per cent of capacity. The increase in demand is from the limited territory the district has lately been serving, as lower prices prevent competition with other fields.

There has been a slight change in the price range on gas lump and gas slack, with no change in gas mine-run or in steam coal. The latter may, however, be a shade firmer. Mines with good screening facilities have the advantage, mines shipping mine-run not being particularly better off than a week ago. Gas lump is now quotable at \$2.40@\$2.50; gas slack is \$1.50@\$1.60 and steam slack remains at \$1.30@\$1.40.

The coal situation at Buffalo has not changed much. Quotations are \$1.60@\$1.75 for Fairmont lump, \$1.40@\$1.50 for mine-run, \$1.25@\$1.40 for slack; \$2.25@\$2.50 for Youghiogheny gas lump, \$2@\$2.25 for Pittsburgh and No. 8 steam lump, \$1.30@\$1.60 for slack; \$1.75@\$2 for Allegheny Valley mine-run. Slack is scarce and strong.

New England Trade Continues Dull

Developments in New England during the week were somewhat less disappointing than was feared. A few shippers have tried to maintain the higher prices of a fortnight ago, but those who have had coal to move have been under pressure to sell at the lower levels reported last week.

In coastwise trade there has been next to no improvement in buying, and sales continue to be restricted for the most part to transactions where there is an inducement to buy.

Accumulations are again the rule at Hampton Roads, with prices fluctuating between \$4.25 and \$4.50 per gross ton f.o.b. vessel. The slightly remunerative prices of early August drew down a very much increased tonnage, and now the agencies are again seeking buyers. While it is understood the threatened suspension of mining in the anthracite districts is supplying a much better market for bituminous in the Midwest there has been no such excess of buying in Boston. Consumers of bituminous coal remain indifferent and there has been nothing so far to warrant a higher price basis.

On cars at Boston, Providence, and Fortland the market is rather uneven. A few factors are trying to keep sales up to the asking figure of \$5.60@\$5.75, but even they are willing to name the same figures for delivery extended through the winter. Others who are pressed with coal are releasing it at prices from \$5.40 up. Boston receipts have been rather light for a fortnight, but it is expected there will be more arrivals during the next ten days.

Within the territory open to Pocahontas and New River from tidewater there has been no improvement in demand for Pennsylvania coals all-rail, but in the narrow region east of the Hudson River where supply is exclusively all-rail the steam grades are in somewhat better request, probably in sympathy with the more active market farther west.

New York Sees Gradual Betterment

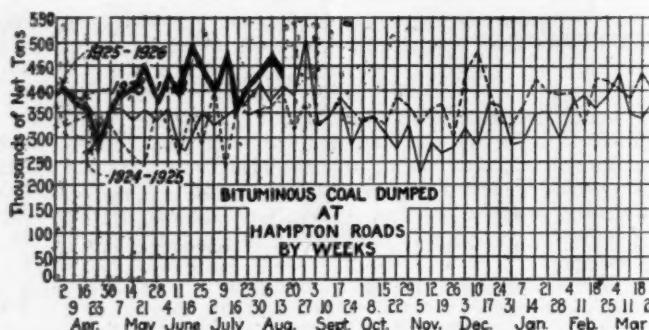
Improvement in the soft-coal trade at New York is progressing. High-volatile coals are more active and the low-volatile grades are in better demand but no better in price. Operators believe it will take at least six weeks' idleness in the anthracite regions to straighten out market conditions.

Though shipments to the local piers are heavier this is of no apparent benefit to the industry at this time. The coal is kept moving, but prices are no better.

Buying shows some improvement. Operators are hopeful of better business with the approach of the fall season. Heavier business is reported from inland points with prices remaining at practically last week's basis.

There is nothing akin to a rush in the Philadelphia market, but demand continues to gain as in recent weeks. If there be a suspension in anthracite mining, the bituminous people hardly expect to feel any effect for a month or six weeks.

Demand has been met so easily that prices have not been touched. As production increases, however, expenses de-



crease proportionately, and the outlook for increased tonnage grows with each passing day. The utilities, like the railroads, gas, and power plants, are buying very freely and will continue to do so. The tidewater situation presents little change.

The Baltimore trade continues to show a healthy increase in export activity and there is a marked improvement in the demand for bunker coals from vessels engaged in other than the coal carrying business. Prices show no material change. The demand is still quite light, and sales competition keen.

Birmingham Feels Better Now

The coal trade is picking up some all along the line though buying is not to say active as yet. There is a feeling, however, that a gradual improvement is to be expected from now on. Demand for domestic coal is gaining a little strength, spot buying showing some increase over last month and the movement against contracts being heavier. There are still restrictions on the shipment of contract allotments, which leaves the mines with a surplus for the open market which is not disposed of without unusual effort.

The steam market which has been fairly good for several weeks is gaining further strength. Inquiry is increasing and bookings are somewhat better the past week. Cotton gins, ice plants and power companies are using considerable coal in the aggregate and the general industrial demand in the open market along with the contract requirements is keeping some mines on five-day schedules. Bunker coal requirements for the past week have been larger than they have been for some time, though the demand from this direction is always irregular.

Production from this field is good for this season, averaging around 365,000 net tons weekly. Prices are stable.

Hard-Coal Trade Active

Activity in the anthracite market at New York centers around tidewater. Heavy shipments of independent coals have been coming to the piers and many loaded boats await buyers. Considerable of this tonnage consists of chestnut and pea sizes. The former size is gaining strength rapidly and in the opinion of some shippers will soon take the lead now held by stove.

For loaded boats of broken coal quotations are based on a mine price of about \$9.20, with \$10.25 the average price asked for stove coal on the same basis. The latter is from 40c. to 50c. below the average maximum price asked along the line.

The large companies are sold up to their regular trade, and some independent producers have refused orders and quotations for future shipments.

Barley is practically out of the market to spot buyers; rice is scarce and No. 1 buckwheat is gaining strength.

Retail dealers report brisk business, but so far have been able to take care of customers' wants without trouble.

The wholesale anthracite market at Philadelphia has tightened up greatly, and most shippers, company and independent, are sold up on their estimated production for the balance of the month. Orders from distant points continued to flow in, and local trade also has picked up rapidly of late.

A few independents are putting premiums on their coal, although they are not moving much in this market, which has always been a difficult one in which to sell premium coal. Retail trade is quiet and it looks as if any general increase in retail prices would be postponed until Sept. 1.

Steam sizes are moving well, and all independents are able to get full price.

As warm weather prevails at Baltimore household con-

sumers of anthracite are tardy in stocking up. The buying public seems to take it for granted that both sides are bluffing in the hard-coal dispute, and that some way will be found to prevent any serious stoppage of work by miners. The demand for coal for use in the fall and winter is not even up to average for the majority of dealers, although some report that they are running ahead of their usual August deliveries.

At Buffalo the demand for anthracite for house use has increased at a good rate lately, but it has not become at all insistent yet. Shippers and retailers are wondering why this is so, with a strike apparently imminent, for, unlike a bituminous strike, there is no coal to be dug by non-union miners. The extra demand has been enough to give consumers a pretty good supply, but it has not been what it should have been.

The demand for coke has increased at a pretty rapid rate, the price of furnace coke at the curb still being \$9@\$9.50.

Lake shipments are increasing slowly. Last week the amount loaded was 51,000 tons, of which 27,900 tons cleared for Milwaukee, 14,800 tons for Chicago and 7,300 tons for Green Bay. Rates remain at 55 to 60c. to Chicago and 50c. to Milwaukee and Green Bay.

Connellsville Coke Market Braces

After a long period of stagnation the Connellsville coke market in the past week suddenly took a brace, with others predicted.

Just one week ago, when spot furnace coke was \$2.90 and some contracts running were at not over that, the Jones & Laughlin Steel Corporation suddenly undertook to buy for the remainder of August and took 20,000 tons, from two producers, at \$3. Two or three days ago it bought some 20,000 tons more, for September, at above \$3, and seemed to want a considerable additional tonnage, for September, on which it was quoted \$3.50, which it considered impossible. Recently it blew in another blast furnace and it is producing scarcely any coal itself, making its own coke chiefly from purchased coal.

The miscellaneous buyers, of small lots for various purposes, increased their buying and by the middle of this week had to pay \$3, against \$2.90 formerly. Larger, and unfamiliar, buyers appeared, chiefly eastern gas companies, and they have bought several good sized lots for 30 to 60 days delivery, paying advancing prices up to \$3.25, which has been paid in several cases and now represents flatly the spot market, with predictions of higher prices any day. With the blast furnaces, a few cents difference in the price is highly regarded. With these gas companies it counts for practically nothing. It is awkward for them to switch from anthracite to coke and when they do even a dollar on the coke is a relatively small matter.

As usual, operators will be keen to blow in ovens and get ready for the demand now plainly in prospect. Often they do this so rapidly that they forestall the price advance they are endeavoring to anticipate and take advantage of, but there is by no means unlimited opportunity for coke production to be increased in the next few weeks. First, certain conservative interests have said \$3.50 is their price and they will not produce until they get it. Then there are ovens that have been idle so long they will require considerable work to get them in shape. Finally some operators have sold themselves up so well on coal that they have not the coal to spare to run many additional ovens, nor would it pay them as the coal prices are not bad.

Heating or medium sulphur coke last week advanced from \$2.65 to \$2.90@\$3 and it is doubtful if it could be bought at under \$3 now. Foundry coke is quite unaffected by these developments, being quotable unchanged at \$3.75@\$4.25, with a limited demand.

Car Loadings, Surpluses and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended Aug., 1925.....	1,043,063	180,936
Previous week.....	1,029,603	178,030
Week ended Aug. 2, 1924.....	945,613	145,636
	<hr/>	
Surplus Cars	<hr/>	
All Cars	263,876	80,661
Coal Cars	296,743	101,542
	<hr/>	
Car Shortage	<hr/>	
All Cars	322,530	146,840

Foreign Market And Export News

British Coal Market Suffers from Sharp Competition

The Welsh steam coal trade last week was very unsettled with business difficult to arrange. Buyers abroad, chiefly foreign depot firms and railways with contracts for Welsh steam coal, have pressed for earlier deliveries, but generally buyers have not come forward freely because they have relied upon buying from Germany and elsewhere. The extra shipping activity has been sufficient to give South Wales ports quite a busy appearance, despite the fact that collieries closed down in the last twelve months through trade depression have not been reopened.

There has been a clearance of standing stocks, and with the current output fully absorbed, colliery owners have been unable to cover all the business offered to them. Buyers are looking forward to a cut in the price of Welsh coal, and unless that is made there can be little trade expected throughout the rest of August.

Foreign buyers seem to be quite in-

different. Nothing is being done in the contract business whatever, all inquiries for the present being in suspense. Reports from the Continent indicate that not only Germany, but also Polish Silesia and Russia are offering cheap supplies of coal over a wide area in Europe, while American coal is being pushed in Italy, the Western Islands and South America.

Coal production by British mines during the week ended Aug. 1, a cable to *Coal Age* states, totaled 4,580,000 tons, compared with 4,525,000 tons in the week ended July 25.

Employers in the Irish coal trade have decided to import non-union labor and seek military protection for unloading colliers, in the hope of ending the five weeks' deadlock which has existed in the industry through the controversy between the union headed by James Larkin and another body of workers who broke away from this union and formed their own organization.

Market at Hampton Roads Gains in Strength

The market at Hampton Roads last week was considerably stronger, and inquiries were on the increase. The demand in the West appeared to be holding the Eastern demand stronger, and shippers generally reported business good.

Foreign shipments were holding their own, and the prospect of a strike was improving the spot market. No long contracts were being made, shippers being wary of conditions a month or two hence.

Industrial Grades Sluggish In French Coal Market

The French coal market situation is still poor in industrial grades, both for French and foreign products. For domestic fuels conditions are rather brighter.

Agitation among the miners has spread to Carmaux (Midi region), where the men threaten to strike unless they obtain the concessions given to miners in the North and Pas-de-Calais.

think that in a short time an upward movement will take place.

Neither Dutch nor British competition is so active.

Coal output in the Ruhr in the first five months of 1925 totaled 54,673,980 metric tons, against 42,397,564 metric tons in the corresponding months of 1924.

Export Clearances, Week Ended

Aug. 15, 1925

FROM HAMPTON ROADS

	Tons
Br. Str. Rose Castle, for Far East	9,885
Ports	—
For Spain:	—
Ital. Str. Robilante, for Gibraltar	9,431
For Italy:	—
Ger. Str. Goty von Berlichigen, for Naples	5,428
Ital. Str. Gilda, for Ancona	2,066
For France:	—
Fr. Str. P. L. M. 17, for Rouen	5,429
For Brazil:	—
Br. Str. Copenhagen, for Rio de Janeiro	5,828
For Danish West Indies:	—
Dan. Str. Uranienborg, for Aruba	209
For Argentina:	—
Br. Str. Antiope, for Rosario	4,094

FROM PHILADELPHIA

	Tons
Br. Str. Navarino, for Havana	—
For Newfoundland:	—
Br. Str. Hitherwood, for St. Johns	—
FROM BALTIMORE	—
For Canada:	—
Dan. Str. Aggersund, for Quebec	4,132
Br. Str. Lady Astley, for Quebec	4,705
For Argentina:	—
Br. Str. Pentoury, for Buenos Aires	5,113
For Italy:	—
Br. Str. Mariston, for Lavona	6,993
Ital. Str. Giovanni Florio, for Genoa	7,515

Hampton Roads Pier Situation

(Gross Tons)

N. & W. Piers, Lamberts Pt.	Aug. 6	Aug. 13
Cars on hand	1,579	1,335
Tons on hand	98,207	80,842
Tons dumped for we.k.	155,645	140,504
Tonnage waiting	16,000	15,000
Virginian Piers, Sewalls Pt.:		
Cars on hand	886	618
Tons on hand	69,900	49,450
Tons dumped for week	80,070	98,503
Tonnage waiting	40,969	22,424
C. & O. Piers, Newport News:		
Cars on hand	2,565	2,524
Tons on hand	131,730	122,195
Tons dumped for week	176,124	152,472
Tonnage waiting	11,700	12,565

Pier and Bunker Prices, Gross Tons

PIERS

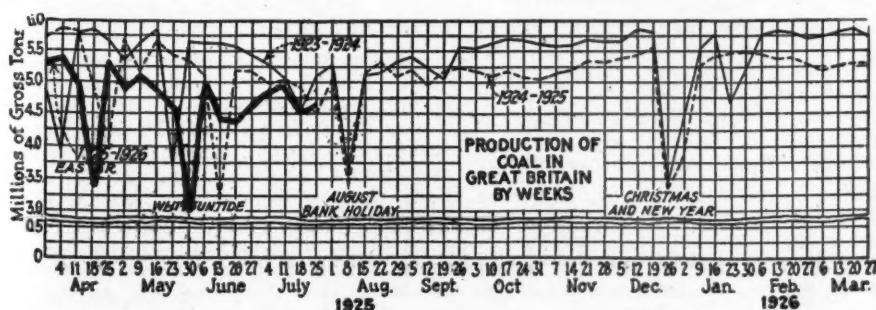
	Aug. 8	Aug. 15†
Pool 1, New York	\$5.25@ \$5.55	\$5.25@ \$5.55
Pool 9, New York	4.75@ 5.00	4.75@ 5.00
Pool 10, New York	4.50@ 4.65	4.50@ 4.65
Pool 11, New York	4.25@ 4.50	4.25@ 4.50
Pool 9, Philadelphia	4.65@ 4.90	4.65@ 4.90
Pool 10, Philadelphia	4.35@ 4.55	4.35@ 4.55
Pool 11, Philadelphia	4.25@ 4.30	4.25@ 4.30
Pool 1, Hamp. Roads.	4.40	4.40
Pool 2, Hamp. Roads.	4.25	4.25
Pool 3-6-7, Hamp. Rds.	4.15	4.15
BUNKERS		
Pool 1, New York	\$5.45@ \$5.75	\$5.45@ \$5.75
Pool 9, New York	4.95@ 5.20	4.95@ 5.20
Pool 10, New York	4.70@ 4.85	4.70@ 4.85
Pool 11, New York	4.45@ 4.70	4.45@ 4.70
Pool 9, Philadelphia	4.80@ 5.05	4.80@ 5.05
Pool 10, Philadelphia	4.60@ 4.80	4.60@ 4.80
Pool 11, Philadelphia	4.45@ 4.65	4.45@ 4.65
Pool 1, Hamp. Roads.	4.50	4.50
Pool 2, Hamp. Roads.	4.35	4.35
Pool 3-6-7, Hamp. Rds.	4.25	4.25

Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

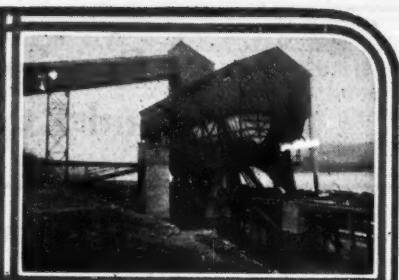
	Aug. 8	Aug. 15†
Cardiff	30s.	30s.
Admiralty, large	17s.6d.	17s.6d.
Steam smalls		
Newcastle		
Best steams	16s.6d. @ 17s.	16s.9d.
	25s.	25s.
Best gas		
Best bunkers	16s. @ 18s.6d.	16s. @ 18s.6d.

†Advances over previous week shown in heavy type; declines in italics.





News Items From Field and Trade



ALABAMA

Coal production in Alabama for the month of July, 1925, totaled 1,600,000 tons, the largest output since March, 1925, and the first time this year that the 1924 figures have been topped, according to a report by the Alabama Mining Institute. Figures by months for the two years follow:

	1925	1924
January	1,641,000	1,855,200
February	1,583,000	1,840,000
March	1,726,000	1,734,000
April	1,450,000	1,713,000
May	1,596,000	1,637,000
June	1,550,000	1,550,000
July	1,600,000	1,490,000

ARKANSAS

Operators with mines in Arkansas are watching interestedly the results of a recent move by the Peterbaugh interests to bring about a wage reduction in the state. The Greenwood Coal Co. in its mine at Greenwood was employing eighty-four men at the 1917 scale the week ending Aug. 9. In that week it averaged 200 tons production a day. The Russellville Coal Co. reopened Aug. 11 with forty-five men. Several smaller mines also are being opened under the 1917 scale, and operators with large holdings in the state whose mines now are idle say their reopening will depend on the acceptance by miners of less than the 1924 scale.

COLORADO

The States-Hall Coal Co. is the name of a new company organized Aug. 1, as the result of the consolidation of the States and Red Mountain coal mines. Owing to a recent ruling announced by the state coal mine inspector, it was necessary to spend several hundred dollars in installing a ventilating fan and also to hire a licensed man in charge, so the management of the two mines decided that they could cut expenses in half by an arrangement of this kind.

Notice from three coal companies operating at Walsenburg was received by the State Industrial Commission Aug. 5 to the effect that wages of the employees of the companies would be reduced approximately 11 per cent within the next thirty days. The companies giving the notice are the Dick Coal Co., the Garden Coal Co. and the Jewell-Colliers Corporation. The action of the coal companies, their officials told the commission is in conformity with the recent policy adopted by the Colorado Fuel & Iron Co., which reduced the wages of its employees. The

Colorado Fuel & Iron and these three companies reduced wages approximately 20 per cent, with the consent of the commission, several months ago.

ILLINOIS

Operation is picking up in southern Illinois. Old Ben Mine No. 8, at West Frankfort, employing 1,000 men, resumed Aug. 17, and No. 12 mine, at Christopher, employing 600 men resumed Aug. 10. With the resumption of three other mines at West Frankfort this month, more than 2,600 men idle since last spring have returned to work. The Old Ben company still has seven mines in this section not affected by the work order.

Three mines of the Madison Coal Corporation are showing an increase in business, which, coming at this season, indicates a good fall and winter. The coal from the three mines is used by the Illinois Central for the operation of trains. The mines, which are at Mt. Olive, Glen Carbon and Carterville, are working from four to six days a week.

After closing a lease for the mine of the Assumption Coal & Mining Co., seven miles north of Pana, Glen Young and ten associates, who announced that the mine would resume operations at once, surrendered their lease Aug. 10. Young found, on examination of the workings, that the expense of repairs and machinery made the reopening of the mine prohibitory. It is said the present machinery will be junked and the mine sealed.

The Silver Creek Mining Co., Farmington, placed sixty additional men at work July 31.

The Peabody Coal Co., Chicago, has purchased the Woodside Coal Co. mine located southwest of Springfield. The price involved is given at \$107,000. Two other mines recently purchased by the Chicago company are located at Auburn. They were owned by Solomon Brothers. With the deed to the Woodside mine was filed a bill of sale covering personal property at the mine and also a deed covering the coal rights. The latter were conveyed by Milton Hay Brown, Jane Logan Brown, Christine Brown Penniman, Logan Hay, Lucy L. Hay and John A. Dushane Penniman to the Woodside Coal Co. and thence to the Peabody company. The coal rights were sold for \$37,000.

International Auditor A. T. Pace took up the charter of Local Union No. 994, United Mine Workers, at the Sunny-side coal mine, one of the first mines sunk in Herrin. A fire a few years ago

destroyed the tipple and washer of the mine and a few months later the property was sold. Since then it has had a varied existence and before the final shutdown owed its employees for about one month's work, which has never been paid.

The mine of the Southern Coal & Mining Co. at New Baden, resumed work July 28, after being idle since last March. About six hundred miners are employed in the mine.

INDIANA

Application for the appointment of a receiver for the Vulcan Coal Co., of Evansville, was filed in Vanderburgh County probate court last week by Charles L. Boyles, a stockholder. Boyles also asks that officers of the company be compelled to surrender to stockholders certificates of stock yet outstanding. The Vulcan Coal Co. is said to be incorporated at \$1,000,000 and to control 49 per cent of the stock of the Southern Indiana Coal Corporation.

IOWA

The Pearson Coal Co. now has three mines at Clarinda, the last one having been opened recently near Hawleyville, with only a 55-ft. lift.

The Black Diamond Coal Co., Gravity, is installing a new boiler and otherwise placing its mine in shape for extensive mining operations during the coming season. Mining machines are to be installed and a new railway switch is to be laid.

KENTUCKY

J. A. Straughan has been appointed general superintendent of the Weeksbury operation of the Elkhorn Piney Coal Mining Co., vice J. J. Fluck, resigned. The Elkhorn Piney Coal Mining Co. is a subsidiary of the Milwaukee Coke & Gas Co. The Weeksbury operation, which is in 38- to 50-in. coal, was brought to a production of approximately \$40,000 tons per month while under the superintendence of Mr. Fluck.

Officials of the Chesapeake & Ohio R.R., on Aug. 13, announced at Ashland, that the 28 miles of the Sandy Valley & Elkhorn R.R. in Eastern Kentucky, had been placed under sole operation of the road, the deal having been pending for a year before the Interstate Commerce Commission. The road originally was built by the Baltimore & Ohio R.R. to connect the Consolidation Coal Co. properties, and later

sold to the coal company, which in turn has transferred it to the C. & O., which agrees to pay \$6,800,000 in cash for the roads obligations, now amounting to \$5,000,000 in capital stock, and \$2,200,000 in bonds, in addition to \$2,536,220 for advances by the coal company. Between Shelby Junction and Dunham, the road serves nineteen coal mines.

MISSOURI

Coal in well paying quantities is being mined on a tract of land owned by John Bohon, in the Lone Star school district, ten miles southeast of Sedalia. Operations were begun about ten days ago. Tunneling 100 ft. into the ground the miners are working on an 8-ft. bed. Fifteen men, miners and drivers, are employed on the premises, digging the coal and freighting it to Sedalia. Three trucks are now in use for that work.

Coal operators in the vicinity of Fulton, contemplate an indefinite suspension of operations at the expiration of the present agreement with the miners. The operators have not met with the mine union officials relative to the proposed increase in wages, taking the position that it is useless to confer as the mines cannot compete with Illinois coal if production costs go up. The miners have asked a tonnage increase for digging coal and higher wages for surface workers.

NEW YORK

The Buffalo water works contract for furnishing 45,000 tons of slack was awarded to the Lake Erie Fuel Co., of Buffalo, on its bid of \$1.39 on a \$2.34 freight rate, which indicates that Pennsylvania coal will be furnished.

OHIO

The Pittsburgh Coal Co. announces that miners loading coal in the three mines of the company at Pomeroy, working on the 1917 scale, are earning an average of more than \$7 a day, based on the 14-day pay distributed Aug. 9. The highest pay among 400 men in the employ of the company was \$9 per day and the lowest was \$6 a day. The three mines are now running from 1,300 to 1,500 tons of coal a day. At the Dark Hollow mine the highest pay for those who worked every day was \$120.96 and the low \$110.92. At Forest Run the high was \$136.68 and the low \$84.33. At Mine No. 75 it was \$136.06 high and \$81.04 low.

Officers of the Island Creek Coal Co. in Cincinnati learned that Ed Merrell was critically ill at his home in Montreal, where he is identified with both coal and steamship interests. Mr. Merrell has many friends in West Virginia and southern Ohio. It was in Logan County that he put in many years developing various mining interests, notably those of the Island Creek company.

The Hysell Run mine, near Cannerville, resumed operation Aug. 3, giving employment to about 50 men, and the management is reported to have on hand orders sufficient to guarantee the men four or five days work each week

throughout the winter. The E. A. Goslin mine in Perry county, between Zanesville and New Lexington, on the C. & M. V. Ry. also opened Aug. 3. About 25 men were hired at once, and it is believed that there will be work for at least 50 more in another week. Both mines resumed under the Jacksonville agreement, according to Frank Bender, subdistrict secretary of the United Mine Workers.

Two mines of the Clarkson Coal Co., at St. Clairsville, which had been working steadily throughout the summer, have suspended operations, owing to the competition of non-union mines of West Virginia. About 750 men were employed and the daily capacity was 4,500 tons. It is pointed out that only 11 out of 181 mines in the eastern Ohio field are now operating.

After ten years of continuous maintenance of a branch office in Cincinnati word came from Lynchburg, Va., the headquarters of the Chesapeake & Virginian Coal Co. to close the suite maintained in the Union Trust Building. George W. Hill, who was active in the company until he died, had charge of this branch and was succeeded by Colonel Tom Morgan, a former president of the Cincinnati Coal Exchange, about two years ago. It is planned to operate the Western business from a branch that has been opened in Detroit under the direction of Fred Walker.

Repairs are being made to the equipment of the Bear Run Mine, at New Lexington, owned by the Gosline Coal Co., which will be put into operation after an idleness of several years. Officials of the Penrod Coal Co. also announced that Mine No. 3, located at Crooksville, will be placed in operation in a short time. A satisfactory settlement with union men is in prospect, according to the officials. In addition several smaller mines will soon be put into operation in the New Lexington section.

Numerous cities and towns in the southern Ohio coal fields have protested to the Columbus Chamber of Commerce recently against the purchase of Kentucky coal by the Columbus Board of Education for school

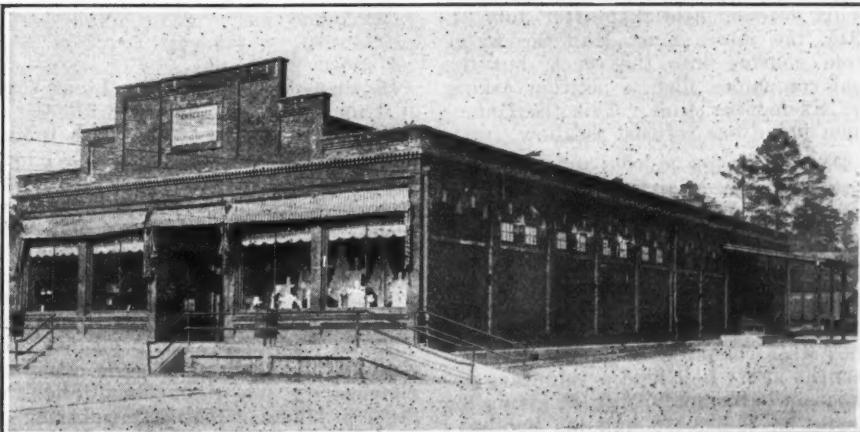
buildings. The cities complaining were Chauncey, Buchtel, Glouster, Trimble, Jacksonville, Nelsonville, Athens and New Lexington. The protests were made on the ground that Columbus is the logical market for Hocking Valley coal and that Columbus wholesalers and manufacturers enjoy fully 80 per cent of the commercial business originating in the Hocking Valley. It also is set forth that coal is the chief product of that section and in order to pay their taxes the operators must sell coal. The Board of Education says that Kentucky coal was selected because operators could insure delivery by Aug. 1 and also because of no clause in the contract exempting the concerns from delivery in case of a strike.

The Wallins Creek Coal Co., of Cincinnati, Ohio, and its representation of Harlan, Hazard and Darby coals, has been consolidated with the Logan-Pocahontas Fuel Co., also of Cincinnati.

The equipment of the Black Diamond Mine, located near Nelsonville, and operated under a co-operative plan by Hall Bros., was completely destroyed recently. The mine was entered and the motors, mine cars, tracks, supports and in fact all equipment was destroyed by sledgehammers and axes. Steps have been taken to rebuild the plant.

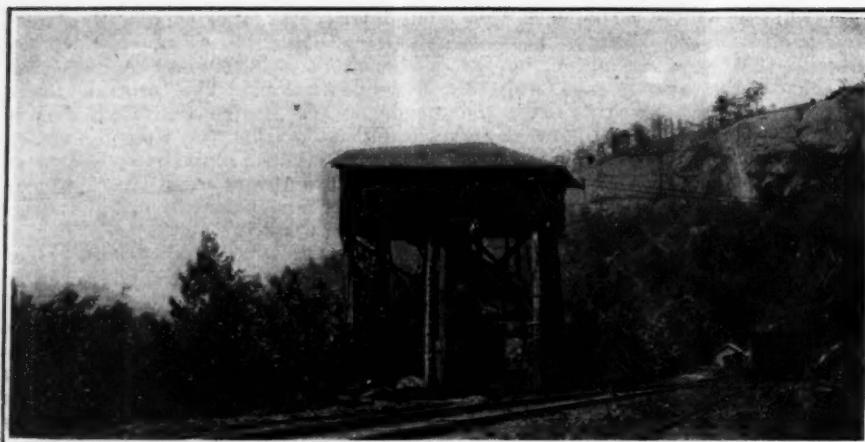
OKLAHOMA

The attempt to operate under the 1917 scale in the Henryetta field is meeting with persistent resistance on the part of District 21, United Mine Workers, aided by representatives of the international and officials of District 14 (Kansas). The order of Sheriff John Russell of Okmulgee County forbidding public prayer meetings by miners opposing open-shop operation of the mines will be fought in court, aided by attorneys of the American Civil Liberties Union, which, in a dispatch on Aug. 11 from New York, offered its assistance. On Aug. 14 troopers made four arrests of miners charged with disobeying the sheriff's no-prayer-meeting order. Mine union leaders said the men exposed themselves to arrest in order to test the validity of the order in the courts.



Commissary at Edgewater, Ala.

In these days of good roads and automobiles the "Company Store" is brought into direct competition with the metropolitan emporium. Furthermore, today the mine worker is paid in cash and spends his earnings where he pleases. In order to retain its custom, therefore, the mine commissary must offer values and service at least equal to those of its competitors. The day of gouging at the company store is gone—let us hope, forever.



Discharging Station of Cableway at LaColeman, Ky.

The coal is brought to this point across the Big Sandy Fork of the Cumberland River to be loaded onto the tracks of the Kentucky & Tennessee Ry. shown in the foreground. The Comargo Coal Co. operates the cableway and mine.

PENNSYLVANIA

Constitutionality of the state anthracite tax law "cannot be made to run the gamut of successive verdicts of juries." President Judge Hargest, of the Dauphin County Court, ruled Aug. 10 in an appeal of the Hudson Coal Co., refusing a new trial. The company has about 40 appeals pending. Recently when a jury trial was demanded in one of the cases, counsel submitted offers of proof for the defense in which they contended they would raise questions of fact not previously passed upon in other cases in which the constitutionality of the law was upheld. The court ruled out the offers and returned a verdict of \$43,530 for the commonwealth. Counsel for the company said it was planned to appeal the case to the Supreme Court.

Judge Van Sweringen, in Uniontown, on Aug. 10 refused to grant a six months' extension to the Melcroft and other coal companies in the Indian Creek Valley to dispose of water taken from the mines, which the Supreme Court of Pennsylvania recently ordered must be stopped from draining into Indian Creek. The mines thus are "bottled up" and their losses will be large, it is believed. The Supreme Court decision held that after July 31, 1925, the mines must stop the water from pouring into the creek, but the coal companies filed a petition asking for six months' time. This the Uniontown judge has refused to allow.

Federal Judge Robert M. Gibson, in Pittsburgh on Aug. 13 appointed J. N. Jarvis, an attorney, receiver in bankruptcy for John A. Bell, coal operator and president of the closed Carnegie Trust Co. Jarvis is a member of a creditors' committee which was formed after the trust company was closed by the state banking department three months ago. Bell filed a voluntary petition in bankruptcy, Aug. 7, giving his assets as \$1,628,535 and his liabilities as \$8,669,097.

The Pittsburgh Coal Producers' Association reports that production in the union mines of this district for the week ended Aug. 8 was 60,825 tons. The weekly capacity is 629,880 tons.

Thus production is 9.7 per cent of capacity. This rate compares with 7.5 per cent in the preceding week and 27.8 per cent in the same week last year. But 12 mines reported out of 80, compared with 14 in the preceding week.

Two men, a miner and his laborer, were fatally injured Aug. 3 in the Jermyn mine of the Hudson Coal Co. when a powder blast exploded prematurely.

Approximately 200 of the best-known men in the industrial world in Pittsburgh, New York and Chicago made an inspection of the Colonial, formerly the Old Alice mine, of the H. C. Frick Coke Co. Aug. 7 as guests of W. H. Clingerman, president of the Frick company, subsidiary of the United States Steel Corporation. The workings of one of the most modernly equipped mines in the country were exhibited, but of greater interest was the immense belt conveyor system from the mine to the river tipple, where coal can be dumped at the rate of 1,500 tons an hour from the belts into the tipple and into barges at the rate of 850 tons in 10 minutes. The equipment includes the longest belt conveyor in the world, 2,439 ft. long, and another which is 1,513 ft. long. There are nearly a score of belts in all.

UTAH

In an address before the Lions Club of Salt Lake City on July 31, O. F. McShane, chairman of the Utah Industrial Commission, said that the 271 men who lost their lives in the Castlegate disaster in March of last year, together with the \$750,000 spent in compensation and the \$250,000 for the rehabilitation of the mine was all the result of carelessness of a fireboss. Mr. McShane declared that rescue workers found the body of the fireboss on a heap of coal with his lamp dismembered, one part clutched in his right hand and the other in his left. The dismembering of the lamp was against the safety rules of the mine, he said. The speaker termed the greatest safety factor a careful workman. He said that it is estimated that at least one-half of the industrial accidents of this state are due to the carelessness of employees.

WEST VIRGINIA

Suit was instituted in the circuit court at Baltimore on Aug. 1 by bond holders of the Big Vein Pocahontas Coal Co. of West Virginia against former receivers-directors of the company alleging diversion of \$100,000. The sum, it is claimed in the suit, should have been placed in a sinking fund for the redemption of bonds. The suit was filed in the name of Frank A. Furst, Paul A. Seegar, Ella H. Hughes, Bessie M. Rice, the Mercantile Trust and Deposit Co. and James Clark Murphy, holders of class B bonds, dissolved last year. Defendants were named as Edward P. Keech, Jr., Van Lear Black, Norville H. Carter, James L. Zelman and Henry H. Heiner.

The largest day's loading in the history of the Chesapeake & Ohio was on Friday, July 24, when 4,042 cars of coal were loaded and started to their destination. This shows the prosperity of the region, traversed by this carrier.

The first annual first-aid contest of the Island Creek Coal Co. was held at Holden, July 26. Twelve teams were entered in the meet which was won by Team No. 3, of Mine No. 8, captained by Fred Class. Second place was awarded Team No. 4, of Mine No. 1. Team No. 1, of Mine No. 11, and Team No. 12 of Mine No. 18, were third and fourth respectively. About 4,000 persons witnessed the contest. Howard M. Gore, Governor of West Virginia; R. M. Lambie, chief inspector, West Virginia Department of Mines, and D. J. Parker, chief engineer, Mine Safety Service, U. S. Bureau of Mines, Pittsburgh, addressed the meeting.

As showing a steady increase in operations, the Thurmond Coal Co., of Logan, with mines at Dabney, McBeth and Yolyn, has asked that 100 coal loaders be supplied by the Huntington branch of the United States Employment Service. The branch in question now has unfilled orders for approximately 500 loaders in the Huntington district, Kanawha Valley and eastern Kentucky mines.

Difficulty is being experienced in filling the demand for coal loaders in the vicinity of Huntington. About 500 loaders are still desired in coal fields tributary to the Huntington district. Mine help wanted for mines in southern and southeastern counties in West Virginia and eastern Kentucky include trackmen, motormen, brakemen and coal loaders.

The E. C. Minter Coal Co. has obtained an injunction restraining Raleigh County from proceeding with the construction of a road under its tipple. The injunction was issued by Judge J. W. Maxwell, of the Circuit Court of Raleigh County.

The Beckley Coal Mining Co., of Meadow Bridge, in Fayette County, recently was sold for \$17,000 in an effort to satisfy a mortgage. It was owned by Clarksburg interests and consisted of 500 acres of smokeless coal land, held in fee, on which a first mortgage of \$50,000 had been obtained. It was equipped to produce 500 tons of coal per day.

WYOMING

The combination first aid and mine rescue team from No. 2 Mine, Cumberland, at a contest held in Rock Springs Aug. 8, won the right to represent the Union Pacific Coal Co. at the International First Aid and Mine Rescue Meet in Springfield, Ill., in September. The team's score was 97.5 per cent on the mine rescue problems and 90.3 per cent on the first aid problems. Teams from three Rock Springs mines, two Cumberland mines and from Superior, Reliance, Hanna and Winton participated.

WASHINGTON, D. C.

The U. S. Civil Service Commission announces the following open competitive examinations: Under scientific helper, to fill vacancies at the Experiment Station of the Bureau of Mines, Pittsburgh, Pa., and in the chemical laboratory of the Bureau at Buffalo, N. Y., at a salary of \$1,140 to \$1,500 per year, applications to close Sept. 12. For second class steam-electric engineer vacancies are to be filled in the departmental service at Washington and in the Indian service throughout the United States, with an entrance salary of \$1,320 in the District of Columbia and of \$1,140 to \$1,320 with quarters, heat and light in the Indian service, applications closing Sept. 21. Vacancies for junior metallurgist are to be filled at Frankford Arsenal, Philadelphia, Pa., and elsewhere at a salary of \$1,860 to \$2,400, applications closing Sept. 26. Applications for under laboratory mechanic to fill vacancies in the Division of Mechanical Technology, National Museum, Washington, and elsewhere close Sept. 22; the salary is \$1,140 to \$1,500. Full information and application blanks may be obtained from the Commission at Washington, D. C., or at the post office or custom house in any city.

CANADA

Operations were resumed at the Cape Breton coal mines of the British Empire Steel Corporation, Aug. 10, in accordance with the terms of the interim six months contract accepted by the corporation and the miners. Coal cutting was resumed in two mines, about 1,500 men being taken on. It was expected that 5,000 men would be working by the end of the week. It is understood that sufficient orders are on hand to keep the mines working six days a week until the end of the season.

The shipments of Alberta anthracite under the reduced freight rate of \$7 per ton arriving at Toronto are in no great demand, consumers apparently preferring a fuel with which they are familiar. It is being sold by the dealers at \$15 per ton. There is some doubt as to whether the full amount of 25,000 tons arranged for will be obtainable at the Alberta mines.

Fears of a coal famine during the coming winter in the event of a strike of American anthracite miners have been dispelled by the arrival in increasing quantities of British anthracite. During the 12 months ending June 30

the imports of anthracite from Great Britain totaled 388,353 tons, valued at \$3,517,576, as compared with 195,809 tons valued at \$1,905,088 during the preceding twelve months. The imports in June were 59,435 tons.

According to word from Edmonton it looks now as if there would be a shortage in the 25,000 tons of coal that Alberta mines were given the opportunity of shipping to Ontario. The Drumheller Mines will be unable, according to reports, to make up their quota, the operators and miners having failed to make terms on a new agreement. The special \$7 freight rate was good only to Aug. 15.

Output of coke continues to show a considerable falling off due to the Nova Scotia coal strike. In June 109,694 tons was produced in the Dominion as compared with 130,068 tons in May. A decrease of 16 per cent. Out of a total of 161,215 tons of coal used for coke making, 19,565 tons was domestic and 141,650 imported coal. Exports of coke in June fell from 4,968 tons to 3,567 tons, and imports rose from 45,945 tons in May to 55,836 tons.

Traffic**I. C. C. Refuses to Change Hampton Roads Charges**

Charges for dumping and trimming coal at Hampton Roads are not unreasonable, according to the Interstate Commerce Commission in its decision handed down a few days ago in Southern Transportation Co. et al. v. Norfolk & Western et al, 101 I.C.C. 211. The Commission held that the horizontal manipulation of the chutes down which coal runs into the holds of vessels must be considered as part of the dumping service and not, as the railroads argued, an incident of the trimming service. The Commission also expressed the opinion that trimming and dumping charges should be published separately.

Charges for docking and undocking ships, for running of lines to make vessels secure at their berths and for the furnishing of fresh water are marine services beyond the jurisdiction of the Commission. The Commission holds, however, that it has jurisdiction over port and wharfage charges for the right to come to the docks to receive coal, particularly bunker fuel, but said that further hearings would be necessary to determine the reasonableness of such charges.

Western Lines Want Increases

The Western railroads have made an announcement addressed to the public in which they explain what will apparently be their position at the hearing on their petition for an increase in revenue in Chicago, Sept. 8. The hearing of this petition is coupled with Docket 17,000, Hoch-Smith Resolution.

They point out that their earnings in 1924 were 3.87 per cent, and announce that an advance of 5 per cent in freight revenues based on the tonnage of 1924 will result in a net return of 4.62 per cent. Particular stress is

laid on that clause of the Transportation Act which provides that carriers generally are entitled to a return of 5 $\frac{1}{4}$ per cent. They announce, however, that they do not propose at this time to demand the full measure of their rights under the law, but will ask for an increase of approximately 5 per cent.

Perhaps the most important phase of the announcement is the following statement:

"As a practical means of carrying this emergency program into effect, the carriers are proposing general advances in freight rates which approximate 5 per cent, maintaining established rate relationships. In the instance of certain commodities the carriers will propose, as a matter of expediency, that the percentage of advance be converted into one applicable in an equal amount to all rates. As a few illustrations: on grain they will propose a uniform advance equivalent approximately to 1c. per bushel; on coal, 15c. per ton; on clay, gravel, sand and stone, 7 $\frac{1}{2}$ c. per ton; on cement, lime and plaster, 20c. per ton."

To Hold Hearing on Raise in Handling Charge

The Coal and Coke Committee, Trunk Line Territory, will hold a hearing at 11:30 a.m., Sept. 9 at 143 Liberty St., New York City, on a proposal by the Central Railroad Co. of New Jersey and the Lehigh Valley R.R. to increase the present charge of 13c. per ton for handling coal and coke through the companies' pockets at Easton, Pa., to 15c. per ton, and to increase the storage charge in such pockets of \$1.85 per pocket per day or fraction thereof, to \$2 per pocket per day or fraction thereof. The reason given for the proposal is to establish rates more commensurate with the service involved and for the use of these facilities.

Illinois Rate Hearing Continued

In order to give the defendant railroads an opportunity to collect additional evidence the hearing before an assistant commissioner of the Illinois Commerce Commission at East St. Louis, Ill., on rates from inner group mines to East St. Louis, Ill., has been continued until Sept. 8.

Three cases are being heard. The first, brought by coal operatives, seeks a reduction in the present rate of 91c. a ton for coal shipped within a radius of 20 miles of East St. Louis. Another case is brought by coal operatives outside the 20-mile zone but within 60 miles of the city, while the third case is on behalf of the operatives of the state at large. The latter two groups are seeking proportionate cuts in freight rates.

Rates on coal from Kansas, Missouri, Arkansas, and Oklahoma mines to Lincoln, Neb., after Sept. 28 must be reduced to the basis of like rates to Omaha, the Interstate Commerce Commission ruled after considering a complaint of the Lincoln Chamber of Commerce.

Obituary

James Minds, pioneer coal operator of the Houtzdale region, died suddenly at his home in Ramey, Pa., Aug. 10. Mr. Minds had been in failing health for several years but lately seemed to be much improved. Interment took place Aug. 12.

Industrial Notes

The reported consolidation of the Weir Frog & Switch Co., of Norwood, Ohio, and the Kilby Frog & Switch Co., of Birmingham, Ala., was confirmed Aug. 9, by J. K. Lansdowne, vice-president of the Weir company. Mr. Lansdowne declined to give the details. For the time being both companies will continue under their present managements. It is proposed to organize a holding company with Oliver De Gray Vanderbilt, president of the Weir company, as president to operate both plants. The transaction will involve no cash, but will be a transfer of stock in both companies, the shareholders qualifying equally. Mr. Lansdowne intimated that the Weir company probably would have the controlling interest in the consolidated concern.

R. L. M. Taylor recently was appointed district sales representative of the New York State and eastern Pennsylvania territory, known as the Reading district, of the Reading Iron Co.

T. V. Buckwalter, who has been chief engineer for the Timken Roller Bearing Co., Canton, Ohio, was made vice-president in charge of engineering at the July meeting of the directors of the company.

The Uehling Instrument Co., Paterson, N. J., recently appointed two new Southern agents to handle its line of CO₂ recorders and other power plant instruments. They are John C. Candler, 315 Glenn Bldg., Atlanta, Ga., to cover Georgia, eastern Tennessee and the southern half of South Carolina, and Charles M. Setzer, of Charlotte, N. C., to cover North Carolina and the northern half of South Carolina.

Coming Meetings

Rocky Mountain Coal Mining Institute. Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

American Institute of Mining and Metallurgical Engineers. 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, H. Foster Bain, 29 West 39th St., New York City.

Oklahoma Coal Operators' Association. Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

New York State Coal Merchants' Association. Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

Association of Iron and Steel Electrical Engineers. Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

National Safety Council. Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

Tenth Exposition of Chemical Industries. Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

Electric Power Club. Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

American Welding Society. Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

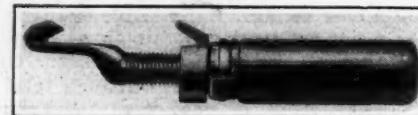
Canadian Institute of Mining and Metallurgy. Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

American Society of Mechanical Engineers. Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

New Equipment

Adjustable Rail Clamp Makes Tight Ground Connection

Just as long as there are direct-current trolley wires in a mine there will be certain types of machines other than locomotives operating from them. Today we have direct-current drills, pumps, hoists, fans and loading machines connected to the trolley circuits.



Makes Tight Contacts Possible

This device makes it easy to get a good tight ground connection at a mine rail. It is provided with a cable-connecting lug into which the wire can be soldered.

To eliminate the difficulty and danger of making efficient connections to mine rails and to get a good return circuit for these machines, the Ohio Brass Co. has designed a rail clamp which can be easily applied to the rail.

Best of all, this new clamp is adjustable and is provided with a handle for tightening it against the base of the rail. Two gripping hooks, one with a threaded bolt section and the other in the form of a threaded nut, clamp to the base of the mine rail. By turning the bakelite handle the hook or

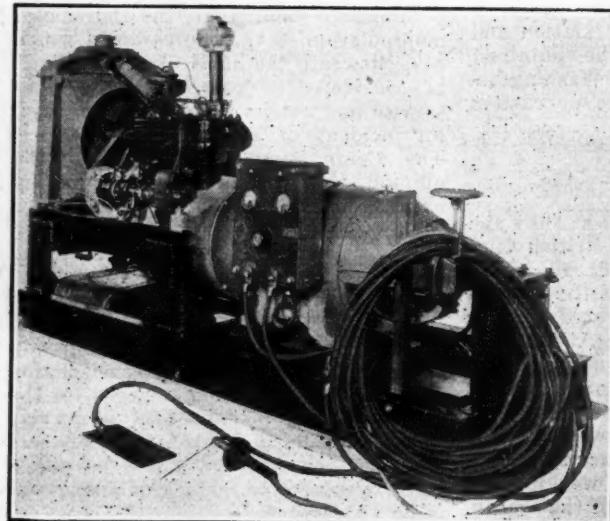
jaw which is made like a nut is clamped to the rail. This handle also is arranged so that it can be slipped back over the cable and the latter soldered into a lug formed in an extension of the threaded shaft. When the handle is slipped back into position it completely covers the soldered terminal and protects it and the end of the cable.

Portable Welder with Gas Engine

A new engine-driven welding set recently was added to the General Electric line of welding equipment. This outfit consists of a standard WD-12 welding generator driven by a Buda engine, all mounted on wooden skids to facilitate moving from place to place.

The engine is a Buda model WTU, especially designed for heavy duty. It is a four-cylinder four-cycle machine of the L head type, with a 3½-in. bore and 5½-in. stroke. The S.A.E. rating is 22.5 hp. at 1,400 r.p.m.; the actual brake horsepower is 33.

The new outfit is being marketed complete with all accessories and ready for use. This unit should be of value in locomotive repair work, in the construction of pipe lines and tanks, in repairs to mine equipment, or on any construction job where electric power is not available.



A Complete Plant

This 200 amp. welding outfit is driven by a 20-hp. gas engine. It is mounted on skids so that it can be moved to a position near the job.

New Companies

The Blount & Meredith Coal Co., capitalized at \$10,000 has been incorporated at Cambridge, Ind. The incorporators are: T. A. Blount, W. T. Meredith, Wm. Griffith, A. A. Vance and Dwight McVicker.

Saunders-West Collieries, Ltd., has been incorporated to mine coal and other minerals with head office at Calgary, Alta., and \$150,000 capital stock, by Alexander Hannah, Orrin H. E. Might, Everett J. Chambers and others.

The Delta Co., Ironton, Ohio, has been chartered with a capital of \$50,000 to mine and deal in coal. E. S. Culbertson, Alice C. Culbertson, J. D. Davies, Miriam J. Davies and J. A. Rogers are the incorporators.

The Kansas Line Mining Co., capitalized at \$34,000, has been incorporated. The company is to buy, sell and lease and develop mines and mining properties. The incorporators are Frank R. Grant, W. G. Basinger and Val Hakanson.

The Burgess Brand Coal Co. has been granted a charter. This company has an authorized capital stock of \$200,000, its general offices to be at Huntington, W. Va. Chiefly interested in the new company are Edward B. Raiguel, E. E. Winters, G. C. Garred, M. R. Tetman and Louise Hart.

The Carbonizing Coal Co. of Canada, incorporated under the laws of the State of Delaware, has been licensed to do business in Canada on a capital stock of \$40,000, and has appointed Emma E. Tait, of Toronto, as its agent.